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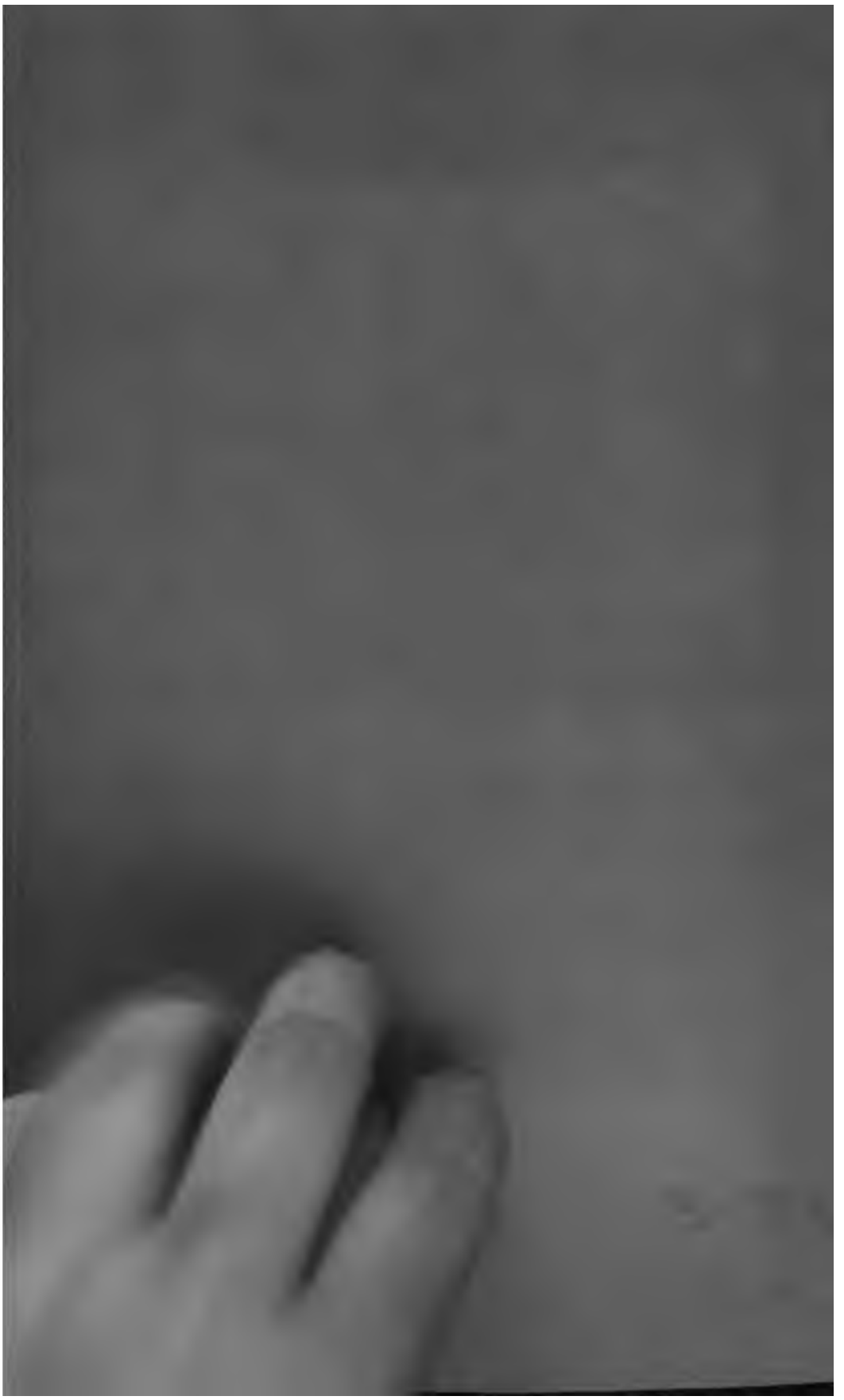

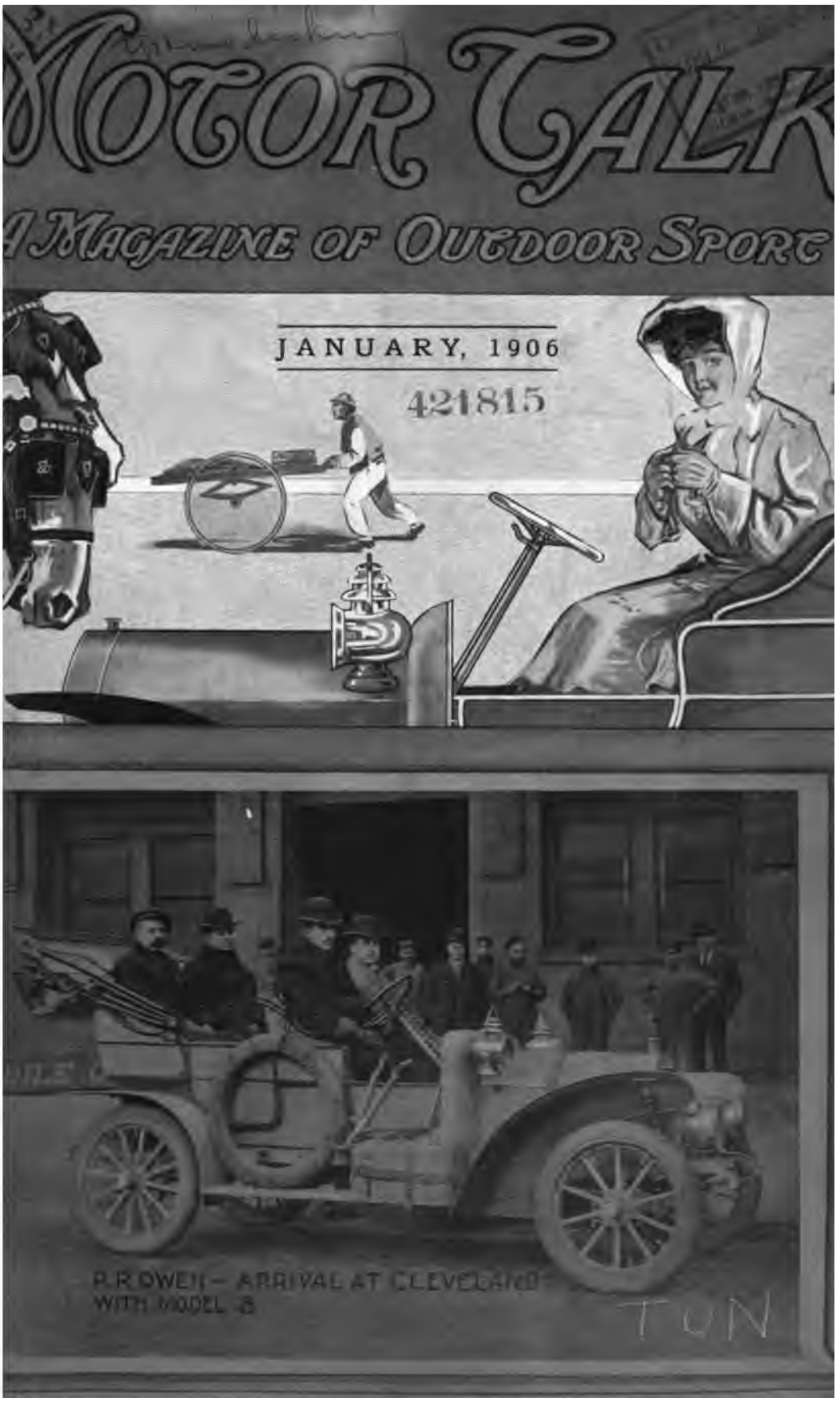
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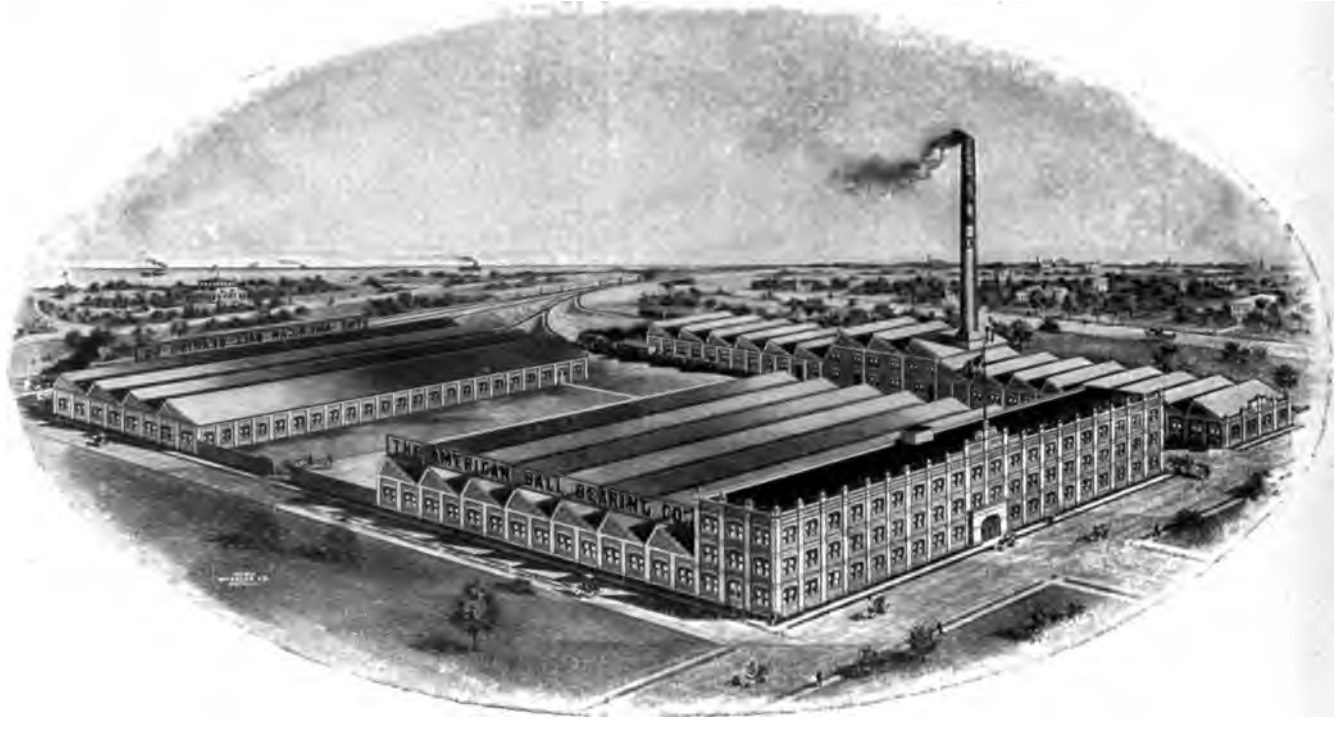

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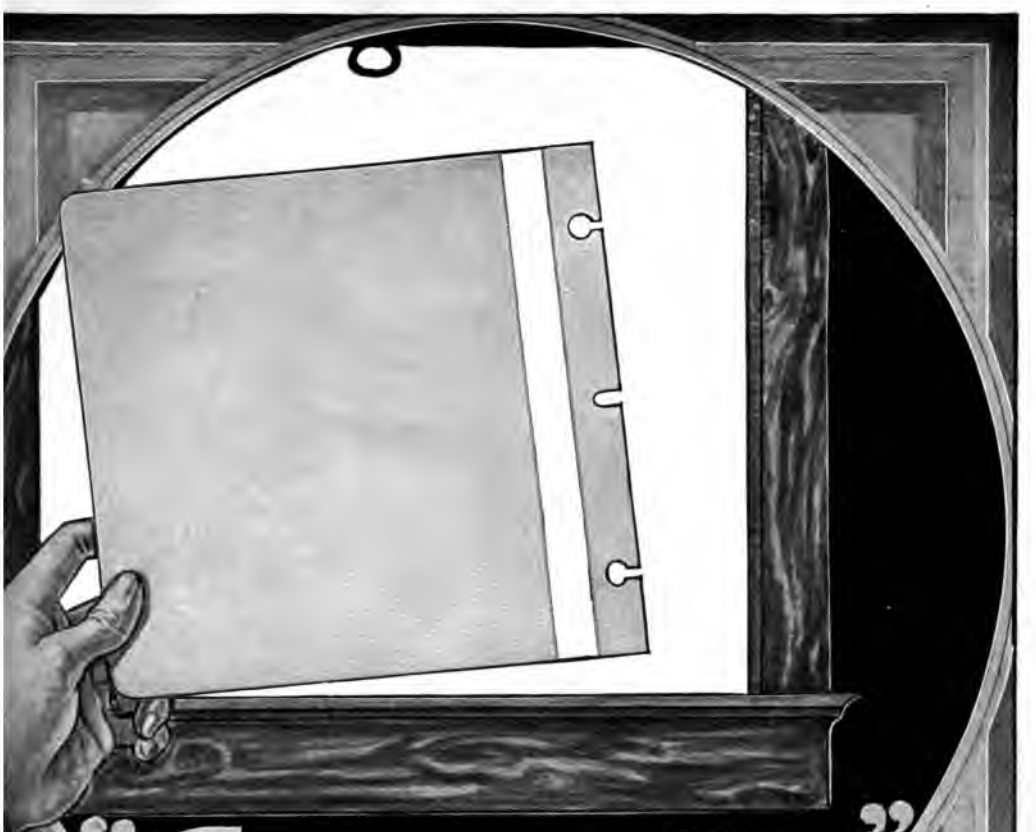

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Motor Talk

A Magazine of Out Door Sports

VOL. II. JANUARY, 1906 No. 1

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A Run Through Switzerland

As Set Forth by Mr. Glenn Miller, Who Rode as the Guest of Mr. James L. Mead

From Motor Way

"JOIN US for an automobile tour through Europe. Bring wife, boys and baggage. Keep latter down to traveling essentials.. Will meet you where you designate. Wire me on receipt of this.—JAMES. L. MEAD."

Such was the terse invitation which reached me in Switzerland as I was about to start on a vacation tour with my family according to the regulation American plan —"Cook's coupons"; over beaten paths, ground like sausages through the mill as thousands had been before us.

We joined. Wednesday, July 12, we started away from the Grand hotel, Vevey, Switzerland, six of us in an 18-22-horsepower Benz, just out of the Mannheim factory, with Friedsam, a chauffeur, "loaned" by the factory, and who had been for several years a tester of machines for the Benz people, but having just reached the military age, was subject to service in the army and could only secure a special passport to travel in Switzerland and France under the proviso that he should report daily his whereabouts. He was a character, typical in many ways of the German—thorough in his work, familiar with every detail of his duties, boyish in disposition, steady of nerve and cool, he was yet of the arrogant and somewhat bull-headed type so often encountered among the Teutons. He was of the manifest belief that roads belong to automobiles alone. If anyone had the temerity to linger in his course after the warning of the motor horn, woe betide him! As for speed limitations—those were for novices and tenderfeet, not for professional chauffeurs! Yet none ever held a lever, controlled a wheel or pressed a pedal with surer nerve; and no eye ever measured distance with more accurate nicety than our Friedsam.

Leaving Vevey at 4:30 in the afternoon, we were soon skirting along the shores of Lake Geneva toward Lausanne. The picturesque barques of this beautiful water, as distinctive as the gondolas to Venice, gleamed in the declining sun. At Lausanne the main street was temporarily closed by street paving— a presumptuous thing while a military chauffeur was passing. With a scowl Friedsam reversed, backed to a cross street and took the roundabout way through Ouchy, easing his feelings by striking a 50-mile gait toward Neuchatel.

Vineyards whisk by us, the upright machines used in them to bombard the atmosphere and keep off frosts, looking like so many huge cannons. Chickens, dogs, birds, men, women and children fly from our way as they hear the horn and see the long trail

of dust rapidly draw nearer. A gleam of satisfaction is in Friedsam's eye. Through Yverdon, at the lower end of Lake Neuchatel, we dash, at slightly reduced speed, catching a glimpse in the central square of Pestalozzi's statue. On through Grandson, with the most perfect roads, approaching a mile a minute on the long down grades. At Concise Friedsam's fat, round, shiny face lowers while he presses the three oil pistons without slackening speed. It is just dusk, and the streets are thickly lined. Women hold their children up to see us, old people draw back against the walls in fear, while country folk gasp in wonder at the swiftly moving car.

At Boudry we stopped an hour for supper, which we were told would be ready the minute we took seats at the table. Mead paced impatiently as the time spun out without evidence of any meal. However, soup was finally announced, and vile stuff it proved—ancient burnt bread mixed in a pastry grease that offended equally the nostrils and palate. The rest of the dinner was no better. Keep away from Boudry.

In the growing shadows we flew up the ascent toward Neuchatel, racing past another machine at the very gates of the city. The pretty cozy cottages on the terraces above the lake, surrounded by multi-colored flowers and bowers of vines, began to show their first evening lights. The pretty monument, emblematical of Neuchatel joining the Swiss federation, was a moment in view and then lost. A brief interval of land after we had left Neuchatel and then Lake Bienne came into sight. Along this favored resort of Rousseau we rushed, the road narrow and winding, but smooth as a board. The railroad separated us the whole length of the lake from the water edge, while on the other side abruptly rose terrace after terrace of vineyard. A little village with English pensions—boarding schools—was reached, Neuville passed, and then a brilliant illumination in the distance announced Bienne, center of the Swiss watch-making industry. The shooting tournament of the Swiss volunteer soldiers was being celebrated as we pulled into this town—half German, half French.

Next morning we had a tantalizing getaway. We had successfully crossed numerous railroad tracks where the gates responded reluctantly to our appeals, and were pushing through the most delightful country under the sun, when we suddenly discovered that we had left our overcoats behind. Of course, the hotel porter had been told to bring them and, of course, had been liberally tipped. Back we turned to the hotel. The porter tendered the coats, which we accepted, but his apologies we declined, and were off.

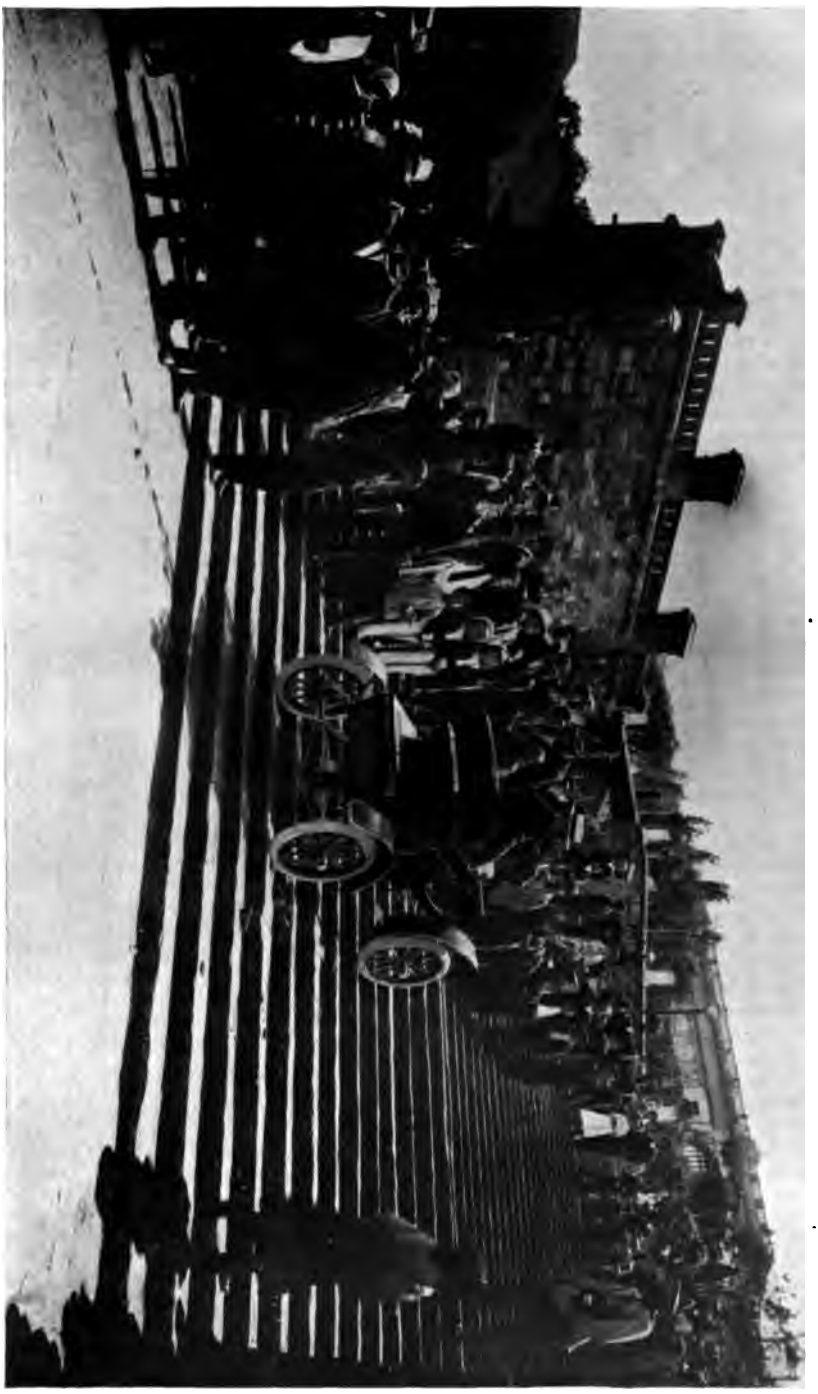
The farmers were driving their teams, tandem, and from the wagon poles swung clouds of smoke to keep the flies from the horses. A recent water-spout in the vicinity of Bienne had wrought considerable devastation to crops. The picturesque Swiss cottages and chalets, the roofs sloping close to the ground, seemed almost like one continual village from Bienne to Berne. These houses served the joint purposes of home for family and beast; the family on one side, the horses and cattle on the other, or the beasts on the ground floor and the owners on the second. In front of each home was a large compost pile, manure in America. The size of the compost pile gauges the wealth of the Swiss husbandman, and the more far-reaching its aroma the wider his fame. My friend Mead remarked that conditions do not differ much between Switzerland and our own country —the flaunting of wealth being conducted with vulgar ostentation in both.

Stopping at the capital of Switzerland sufficiently long enough to take a picture of the famous bear clock, look at the bear-pits and regale ourselves in the luxurious rathskeller, we were soon whirling around corkscrew curves on the way to Lucerne. The narrow roads, the steep descents, the wee bridges looking at a distance like covered wagons, had no terror for Friedsam. On the steep acclivities parties of men and women were haying. Beautiful, well-kept fields, fine gardens and neat, tidy homes testified to the thrift and industry of the people of this region. The women share the heavy work of the field with the men.

At Wohlhusen the monarch of the wheel seat had to ease down and finally stop the machine by reason of the village fair or market in progress. White pigs, goats, chickens, calves all held possession of the main thoroughfare of the place; and while one chicken or pig was below the notice of Friedsam, and might appropriately be offered up as a sacrifice to speed, to sweep over several score of animals crowded into a narrow street was different, and would also endanger budding humanity, since many a fond mother had her baby and pig in the same baby carriage.

At Langnau we tarried for dinner at the big Lowe—Lion—hotel. Delicious mountain trout, just out the water, luscious strawberries, so large you couldn't get a whole one into your mouth, and other delicacies, provided a delicious contrast to the meal at Boudry. A monster black St. Bernard dog, the size of a large calf, entertained our boys at this place.

How were we seated in the car all this



CLIMBING THE FAMOUS STAIRWAY AT ODESSA, RUSSIA. 193 STEPS, 30 PER CENT. GRADE.
Since this picture was taken, over 2,000 people have been killed on these stairs.

while, with Mr. and Mrs. Mead, my own family of four and the chauffeur to care for? Three sat in the spacious seat of the tonneau, while one boy made a seat on the valises piled in the front of the tonneau. In the front seat the chauffeur and Mr. Mead each had a place, while the remaining boy sat on a rug upon the door, his feet resting on the running board. All were comfortable. Both youngsters spoke French, and it was convenient to have one always ready to alight to make enquiries.

Lucerne was a place we had all visited several times in days past, so that we were familiar with its natural attractions as well as its sumptous hotels and famous Casino or Kurhaus. Thence we started on our way over the circuitous road bordering Lake Lucerne, one of the most beautiful rides on this whirly-gig of joy and trouble. With his habitual indifference to warnings on signboards, Friedsam let out the car for a lively spin. The route from Lucerne for 20 miles is a succession of little summer resorts and villages, and the authorities of some of these places labor under the idea that pedestrians and carriages have rights on the road. Mr. Mead had, by sundry processes, endeavored to impress the same doctrine upon his chauffeur, and to inculcate in him the notion that the man afoot had superior rights upon the king's highway. But Friedsam was "[illegible]" and with tenacious belief in the divine right of kaisers and automobiles traveled merrily along at 30 or 40 miles an hour where the regulations called for [illegible] suddenly, in the narrow streets of [illegible] a policeman [illegible] with a big pole, which he [illegible] across the road, like a toll-gate. [illegible] and then en[illegible] which only two cars [illegible] can pull off [illegible] their tongues as [illegible] But the car [illegible] So [illegible] and [illegible] one of [illegible] lightful rests [illegible] people [illegible] ller are to [illegible] re than I can explain. Yet I rd one fade expatriating on the pleasure of her stay at the Cecil hotel in London, telling in the next breath how bored she was by Switzerland. The Great Potter often used some very cheap clay.

After an exhilarating ride along the Axenstrausse, the most picturesque road in Europe, we turned backward and headed for northern Switzerland. Cherries were ripe and as the wayside was lined with cherry trees, we had frequently to stop to permit pickers to remove their ladders. Pushing by Schwyz, Arth, Zug, Barr and Horgen we reached Zurich about dusk.

A great national musical festival was in progress. Every hotel was crowded, so we drove along the northern shore of Lake Zurich until we reached Erlenbach. Not only were we able to secure accommodations at the village inn, but we found there a house-maid, reared in Ohio. A bridal party was in progress. The wedding had taken place in the morning, but as wedding festivities in Switzerland cover 2 days, we were invited to join in the cheer. A dance followed the bridal dinner. The bride's duty seemed to include the "dancing down" of every gentleman in the party. About daylight the dance ceased and the young couple started away midst bacchanalian cheers. After the furious eating, drinking and dancing of a Swiss wedding the bride who can survive a honeymoon is certainly well equipped to work alongside a field horse for life.

As a hint that fast driving was not altogether to his liking, Mr. Mead next day assumed the place at the wheel and allowed Friedsam to take a seat in the tonneau. Mrs. Mead's sympathies were with Friedsam and his spirited driving; but Mr. Mead feared that penalties might not always be held down to the 20-franc limit. Friedsam nursed his feelings and secured his quiet revenge in early season. While merrily rolling along the Austrian border, with the infant Rhine to the left, a rear tire collapsed. With premeditated deliberation Friedsam proceeded to consume all the time possible in repairs. Ordinarily, a new inner tube could have been inserted in 15 minutes, but the operation consumed 2 hours for our military chauffeur. We played mumble-peg, ran foot races, visited a St. Gallen lace factory and took snap shots of the region about to fill up time while Friedsam was working. Then we faced about and made a quick return by the Wallensee to Zurich, to secure new supplies for our car.

Whether Europeans are naturally more stupid than Americans or we only think them so, is a point I will not stop to discuss. Mr. Mead ordered new tires shipped from Germany to Zurich. A wrong size

A TYPICAL SCENE AT THE ORMOND DAYTONIA BEACH WHERE THE GREAT RACE MEET IS HELD THIS MONTH.

was furnished him. He returned them to the factory and by wire, phone and letter ordered tires of the right size sent to meet him at Vevey. Instead they were sent to Zurich. Then he directed that they be forwarded to Geneva. After waiting at Geneva 3 days, keeping wires hot with inquiries, he was advised that the tires had come by parcel post. After sundry conferences with post office officials to no purpose, he was relieved, if not mollified, to learn that the tires had not yet left the German factory.

At Cham we stayed over night at the Raben—raven—hotel. From our reception and entertainment you would have thought us long lost children just recovered by the family. The landlord, his wife, and pretty 16-year-old daughter put themselves out to entertain us and make memorable our stay. They showed us over the village, took us to the palace, spread every sort of edible and showered us with attention. Mr. Mead's German became near perfect as he chatted with the bright, pretty Fraulein. When we quit the hotel the whole family surrounded our machine and bestowed fervent adieus, well wishes, compliments and devoted farewells upon us. Such ceremonious attention we received no where else in all Europe. At Cham we visited the works—or tried to visit the works—of the Anglo-Swiss Condensed Milk Company. The superintendent was gruff and discourteous, refused us admission and left us to look at the hundreds of wagons laden with milk cans coming to the factory from every direction. This was the only instance of discourtesy we received in Switzerland.

It would be but a guide-book recitation to tell of our ride by the lovely shores of Lake Zug to Lucerne, thence over the Brunig pass to Brienze, along Lake Brienze to Interlaken and thence to Lauterbrunnen. Such a feast of gorgeous scenery the eyes behold but few times in a life-time. As we ascended the canyon to Lauterbrunnen we passed scores of carriages with Alpine picknickers who had been spending their Sunday in the shadows of the Jungfrau. The Swiss worship their mountains and forests, nor do they ever grow tired of them. Many of these holiday mountain climbers had edelweiss in their hats. The road was dusty; long ribbons of dust being left behind us, but not once did we hear complaint from the Swiss merrymakers who had to take it in their faces. The beautiful waterfalls which scatter into great white spray as they drop thousands of feet over the precipices were particularly impressive. At Murren we went to a fashionable hotel, where, next to the glaciers, we were brought to the very edge of the arctic world. Several bejewelled members of French demi-monde had drifted into this far-away nook, strange habitants of this rugged spot. The views between Murren and Grindenwald, a succession of glaciers, ice plateaus and magnificent water-

falls, defy description. Not once did our car fail us in the ticklish situations of sharp declivities, stony roads or slippery surfaces. At the beginning of the present year most of the important Swiss passes were closed by the authorities to automobiles. I am free to say, however, that there is not a pass in Switzerland traveled by post diligence or carriage that is not perfectly safe for automobiles. If motorists have abused the hospitality of the road, they have only themselves to blame for the results.

Our mishaps in Switzerland were of the minor variety, entailing but little delay. A disconnected fan belt, two or three inner-tubes affected with appendicitis and one punctured tire, made the sum total of our troubles. Nowhere in my whole life have I enjoyed a more delightful treat than our circuit of Switzerland in the Benz. I had previously been over this land on foot, by carriage and by train, but in the automobile I got the condensed essence of it all. At Geneva we bade our Friedsam good-bye, that he might return to Germany to join an automobile corps in the army maneuvers. His trained hand and eye had carried us safely through the ticklish places at high speed without accident to life, limb or machinery. Fat, rosy-faced, he is now serving the first of his 3 years in the German army—a period of existence no German youth anticipates with any degree of pleasure. We bade Friedsam and Switzerland adieu at the same time, and while our taciturn chauffeur was riding toward Mannheim by the Swiss Federal Railway, we were entering France by the way of Bellegarde in Haute Savoie. Over the smoothest of European roads, the even beat of the motor in perfect cadence with the smoothness of our travel, we were striking away from the most picturesque corner of the earth into more cultivated and more cultured, even if less honest and frank neighborhoods of Europe. As the pebbles crunched under our tires and sang as they flew to the sides of the road, they talked merrily of the perfect manufacture of the old world, and of the places of extreme polish we were to visit; but our eyes, while fixed ahead on that long vista of green, well-finished country cut by the sinuous, inviting pathway that tempted the traveler to the charms beyond, saw only in lingering vision the stern, white, aged peak of Mount Blanc, grave in its bold likeness to the features of the equally austere Napoleon; saw the rugged, ragged mountain sides split with crevices that bespoke the anger of the gods, who, in wrathful torment, tore asunder the monuments they had reared; saw the softer green-clad hillsides dotted with low chateaux, perhaps the home of peasant, perhaps the home of prince, or, even likely, the home of intruder from other lands, come to spend his money or to seek inspiration worthy of intended masterpieces of pen or brush; saw perched on cliff and rocky shelf and minor peak brave castles of the erstwhile mighty people in this museum of mighty hills; saw the quiet, clear, blue, mirror waters of the peaceful lakes conscious of their safety in the protection of the unbroken guard the mountains had placed around them; saw with intermittent glimpses through the great arched windows of the Axenstrasse, the triangular, snowy point of Bristenstock; saw all the beauty there is in mountain, lake, gorge, snow-capped peak and ice-bound cliff in one cinematographic picture. For we had toured Switzerland in a motor car.

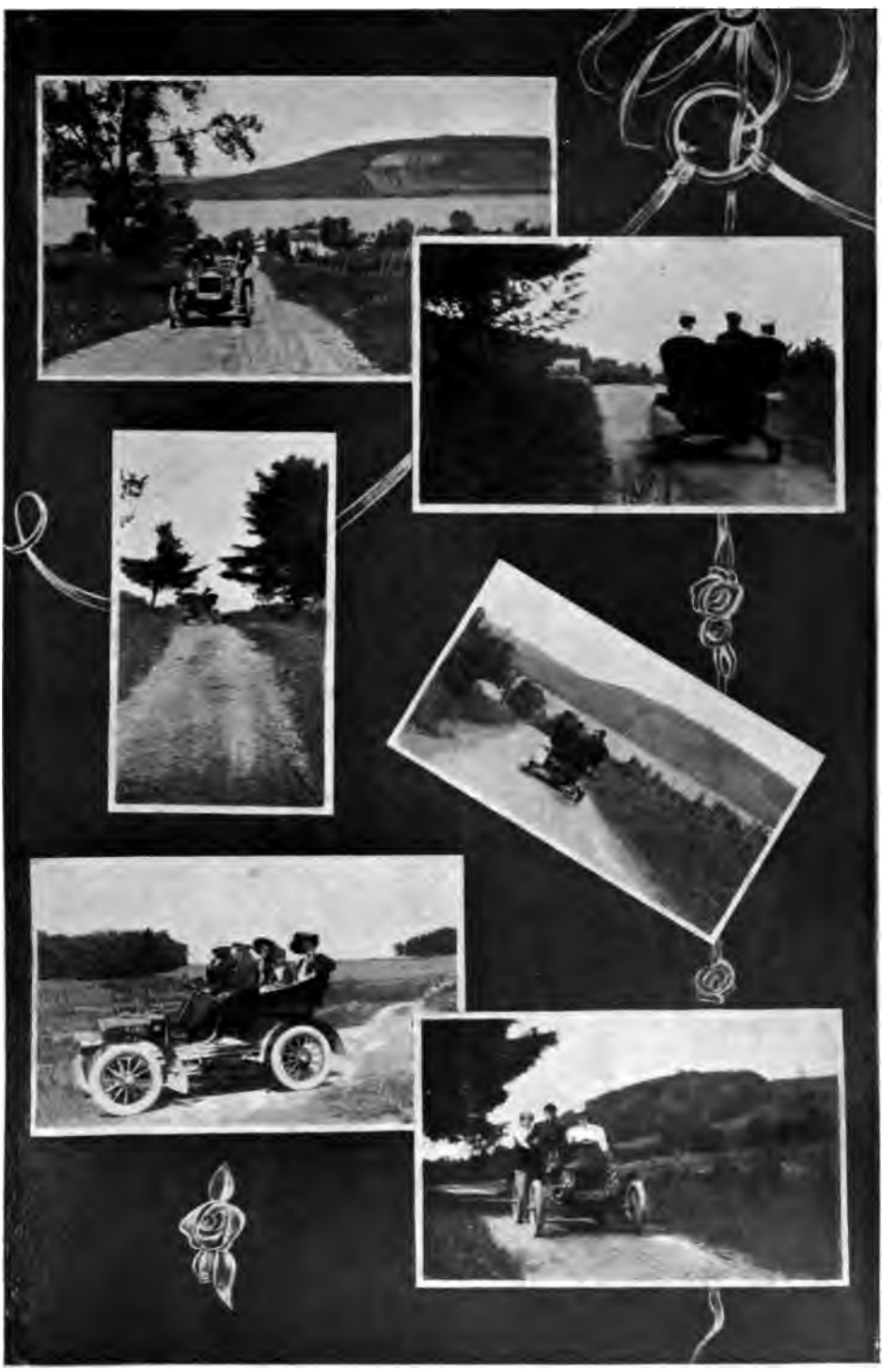
Motorists can Secure Good Roads

If the good roads movement is to grow, work among the farmers is absolutely necessary; there must be a campaign of education. The value of the farm lands in the United States is $6,133,000,000, the value of crops to be moved each year is not less than $4,707,000,000. Practically all of this must be moved to some extent over public highways. In addition, the value of horses is figured at about $1,222,000,000; so the farmer is not so badly off as one might suppose.

The government has proved that a single horse can haul on a good macadam road 6,700 pounds; that on a dirt road it can haul but 3,300 pounds. In other words, a farmer must keep two horses to do the work one could do on good roads. It costs the farmers $946,414,665 to move their products; on good roads it would cost about 40 per cent. of this. The farmer might save 60 per cent. were he wise.

Yet, with these figures staring him in the face he is opposed to good roads simply because he fears automobilists will enjoy a ride over the highways he has improved. In New York state 100 miles of road can be built under the state aid plan so that the man who owns a $3,000 farm will pay only about a single dollar as direct tax and not over 25 or 50 cents as his share of the state's proportion taken from the general taxes.

If the automobilist will acquaint himself with a few such facts and will take the trouble to talk to farmers whenever opportunity offers, converts will be made



AUTOMOBILING IN NEW YORK STATE—THE STORY BY PICTURE OF A SUMMER'S DAY TOUR MADE IN AN OLDSMOBILE LIGHT TONNEAU CAR.

The Automobile in Country Practice

Dr. Henry B. Hart, tells a Cheerful Story of his Experience with the Motor Car

From Horseless Age.

BUT a year or two ago the question before the majority of physicians was, "Is an automobile better than a horse?"

Now it is, "Which motor wagon is best for my business?"

This pretty well covers the new point of most of the doctors who are keeping up to the times, for the ability to get to your patient promptly is frequently as important as having the instrument or drug which may be needed when you get there.

At the time the last Doctor's Number was published I was using a steam runabout in my business, and my conclusions were summarized as follows: "Keep a runabout if you can, but keep one horse to fall back on in case of need."

I have had a change of heart since, for I bought one of the light gasoline runabouts in July, 1904, soon after they increased their horse-power. I had the carriage top added; also boot beneath the car to protect the parts from dust, and that car has been running steadily through the winter with the exception of a couple of weeks when the snow was drifted badly and through this season, being laid up only for a few days while my differential gear was being tightened. The car does the work of two horses, as I frequently drive it 40 or 50 miles a day in my practice, and the idea never occurs to me when starting on a trip that I may not be at home at the stated time. In the summer the little car carried my wife to Cape Cod, some 500 miles, and within a few days I have run to Boston, 1000 miles distant, going one day and returning next, so for reliability my runabout is hard to beat.

My expenses since owning it have been in tires. I have blown out one inner tube, value $6.80, and repaired numerous punctures myself. This year I had new tires put on all four tires, those on the wheels being worn by getting into car tracks going through Boston on a trip to Portland. Up to that time they showed no wear and would have gone another year. Gasoline costs me 16 cents a gallon, and 1 gallon will carry me 20 miles, so with what repairs I have and all expenses (except natural deterioration) the cost of upkeep is about equal to keeping a horse. But on the other hand, it is doing the work of two horses, and the time saved on the road and relief from the manner of constant riding more than pay the difference.

CONCLUSIONS.

My experience has impressed these facts upon me, that this particular make (and half a dozen popular priced carriages are as good) is certainly to be relied upon to do a doctor's business wherever there are reasonably good roads.

2. That the cost of keeping is no more than that of a horse and carriage, and far below that of two horses.

3. The motor car saves the country practitioner half his time and a large percentage of bodily strength.

I take care of my carriage myself, but have little to do beyond oiling and keeping tanks filled. I give an occasional inspection to all nuts and parts, but have little trouble from this source.

Finally, I have never had a breakdown and never been towed home.

Motor Car Industry

A recent issue of the London Times contained a lengthy article on the motor-car industry, from which the following was taken by Consul General Wynne:

A study of the figures relating to the motor-car industry shows that the principal works and factories of this country have during the past season had their capacities taxed to the utmost; their output has been immense; the prices they have realized handsome, and yet they have not been able to fill the demands of the consumer.

After careful inquiries in the seats of the industry, we may estimate the production

during this year up to the end of September at nearly 13,200 cars of all grades and sizes, together with some 15,000 motor-cycles. These are large figures, and their significance can not at once be realized. Taking the average selling price at the works as £200 per car and £30 per cycle, this means that during nine months the turnover of the works has been £2,640,000 in cars and £450,000 in cycles, together over £3,000,000. The total trade, taking middlemen's profits into consideration, must be well over £4,000,000, and this has been achieved in an industry which has yet to see its first decade.

The French automobile press has described Great Britain as a much more valuable market for their manufactures than the French market itself. During the first nine months of 1905 there were imported 4,761 motor cars, valued at £2,064,650, and 1,395 motor cycles, valued at £45,720—that is to say, Great Britain has only been able to make some 70 per cent. of its requirements. In addition there were imported £650,155 worth of parts of motor-cars and cycles, so that the total import trade has reached the large amount of £2,760,525, showing that altogether over £6,750,000 worth of motor cars and cycles has changed hands in the British market during these few months.

The average price of the imported car was £380 in 1904 and £433 in 1905. The great advance is in the quality of the product. The British output is largely made up of the smaller and cheaper cars, and it is doubtful whether corresponding figures on the same basis would show an average retail selling price of more than £250-£300. This means that the foreigner has secured the cream of the trade. Of course many cars worth double and treble this average are British made throughout, but the car for the man of moderate means has been the pet of the British makers, and the great number turned out must infallibly bring down the average realized price. The "light-car," as it is termed, has not had so much attention paid to it on the Continent, makers' efforts having been concentrated on the larger and more profitable sizes, and it is practically certain that if it were not for the American small-car imports the average import car value would be even much larger than it now stands. The trade is expanding, and seems at the moment to justify the prophecy that it will continue to expand.

AUTOMOBILING ON PIKE'S PEAK ROAD.

An Automobile Alphabet

By Carolyn Wells in Metropolitan.

A was an Automobile.
B bought it.
C Chauffeured it.
D Disdained it.
E Envied it.
F Fussed with it.
G Got under it.
H Hooted at it.
I Ignored it.
J Jollied it.
K Kicked about it.
L Loved it.
M Made fun of it.
N Named it.
O Oiled it.
P Paid for it.
Q Queered it.
R Rubbered from it.
S Swore at it.
T Tinkered with it.
U Understood it.
V Vetured out in it.
W Waited for it.
X, Y, Z and ampersand
Ran the thing to
beat the band.

ALL tire manufacturers agree to the general proposition that the more experience an automobile owner has had in the care and use of a car, the better results will he have with his tires. This is but another instance in which experience proves itself the greatest teacher possible to have, although, as usual, an expensive one.

It is also an established fact that the man who takes the best care of his car in general will get the best service from his tires. There are two principal reasons for this, the first is that he who takes good care of his machine will similarly take good care of his tire equipment, and the other is that an automobile user who is attentive to his car's requirements will look after its lubrication very carefully, and the fact that this is done is in itself a very good reason why his tires will give him increased service and mileage.

Ask any tire manufacturer what he considers the one most essential thing that a tire user must observe in order to get the most service possible from his tires, and he will undoubtedly tell you it is to keep the tires fully inflated. The fact that tires are allowed to run in a more or less deflated condition is, more than almost all other things combined, the reason for their wearing out before they should.

A tire is not fully inflated if it does not stand up round under a full load when the car is standing still. Even then it will flatten slightly when the machine is in motion. To keep his tires fully pumped up at all times; to see that cuts in the tread, which extend to the first layer of fabric, are promptly mended with vulcanized repairs; to see that water or moisture in any form is kept from the interior of the casings and to see that tires are not overloaded, are the principal requirements necessary to long and satisfactory service from them.

If these things are done and if the tires are well made, so that rim cutting, tube pinching and injuries of this character can only occur through indifference and neglect, there is no reason why an automobile owner's expense for tire equipment should be at all exhorbitant or severe.

Much has been written and printed concerning the care and use of tires for automobiles, and much misinformation has been circulated. An instance of this was when one of the publications of the automobile trade some time ago printed an item about the experience of one owner of a car who put water in the casings of his tires to keep them from heating. It was by inference suggested in the article mentioned that this scheme was worthy of emulation. Naturally such very bad advice would lead to trouble for those who acted upon it, and undoubtedly a good deal of harm has been done in similar ways, owing to the inexperience of a great many automobile owners in the use of their cars and in the care of their tire equipment.

It is a good plan, when in doubt, to ask the manufacturer of the tires you use what you should do to remedy whatever difficulty confronts you.

One principal thing for automobile users to remember is that while rubber is impervious to the action of water, the fabric with which the tire, in conjunction with rubber, is built up, is seriously effected by coming in contact with moisture. If water gets in through a cut in a casing, or by reason of the staybolts not having been kept tight, trouble will follow sooner or later. The fabric will slowly decay and the disintegration of the interior of the tread and wall of the tire follows.

The making of repairs is not so difficult a matter but that such attention should be given tires as soon as the necessity arises: The following for instance, are simple directions for repairing a tube:

To Repair a Tube.

It is advisable to carry one or more extra tubes to be inserted along the road, if need be, in order that a punctured tube may be repaired with greater leisure and convenience at the journey's end. But whether made at the roadside or elsewhere, a puncture is repaired as follows:

Remove the damaged tube, and be sure that the cause of the puncture is removed from the tire. Locate the puncture or punctures (both sides of the tube may be penetrated by a long nail) by the hissing of escaping air; or, if necessary, immerse the tube in water, and the bubbles will reveal the leaks. Select a rubber patch of the size necessary, wash the surface to be applied to the tube with a little

gasoline, and roughen it thoroughly with emery paper. Spread evenly over this surface a coating of cement. While the cement dries (give it plenty of time; it may need from 10 to 20 minutes) dry the inner tube, and wash with a very little gasoline the surface to which the patch is to be applied. Roughen with emery paper the entire area the patch will cover, and roughen it thoroughly. Many operators fail to make it rough enough. Coat this surface with cement also, and when the cement on both patch and tube is so dry as to be very sticky, apply the patch, pressing it down firmly all around, but especially at the edges. Allow a little time for perfect adhesion, then sprinkle talcum freely over the repair. Slight inflation of the tube and the moistening of the edges of the patch, will show whether the repair is air tight, and this is a wise precaution, at least until one has become familiar with the work.

A leaky valve is likely to be mistaken for a puncture. If air escapes from the tube, and no puncture is located, look for the trouble in the valve stem. New parts for the valve may be required, and these are in a small envelope in your repair kit.

To repair a casing is a task which ordinarily should have the attention of someone prepared to apply a vulcanized patch. To make a temporary repair, however, is simple and the directions are as follows:

To Repair a Casing.

If a casing has sustained a severe cut, or large puncture, it is wise to wrap a repair bandage about the tire, at the point of injury until a permanent repair can be made. Dirt and moisture will thus be excluded, and possible blowing out of the tube prevented. In case a tire has blown out, or the casting has been ruptured, in any way, the repair bandage will make a repair enabling the car to travel a long distance, if necessary.

To repair a damaged casing, remove the tire from the wheel, wash with a very little gasoline the interior of the casing at the spot to be repaired, and apply a coat of cement.

If the cut in the casing is no more than a puncture, apply a fabric patch, as follows: Coat with cement the rough or fractioned side of the patch, after cutting same to the desired size, and when the cement on both the casing and fabric is thoroughly sticky, apply the patch and press down hard all around. Sprinkle talcum powder freely over the patch before returning the inner tube to the casing.

If the cut in the casing is a large or ragged one, apply a rawhide patch, in the same way, instead of a patch of fabric.

When the patch has been applied, put the tire on the wheel in the usual way, and inflate slightly. Now wrap a repair bandage over the damaged part of the casting, by buckling one end about a spoke and winding the bandage around both tire and rim, allowing it to overlap itself by half its width each time it encircles the tire. When the bandage is drawn tight buckle the loose end to another spoke, then inflate the tire fully.

A tire fully inflated will stand up round under its load, when the car is standing still. If it does not do this it is not pumped up enough.

A very little experience is sufficient to make the work of taking off and putting on a tire, no matter what style of rim is used, a very simple one. A new tire will be harder to put on than one which has been used, but the exercise of a little patience and some knowledge makes the repair of punctures, which no one can hope to escape entirely, not especially to be dreaded except for the inconvenience and loss of time they may occasion.

The following are some suggestions prepared by one of the large manufacturers of tires, which will be found worth consideration by any automobile user no matter what make of tire he employes.

PROFITABLE POINTERS

Avoid sudden applications of the brake.

Air costs nothing. Tires are expensive.

Don't let weight rest on deflated tires, even over night.

Running a tire flat, even a short distance, is sure to be costly.

If one side of a tire shows more wear than another, turn it around.

The surest way to have satisfactory tire results is to buy judiciously.

Keep grease and oils away from your tires and tubes always. They destroy rubber.

Keep rims in good order, straight and true. Rust is destructive. Paint preserves.

Buy good tubes. A poor tube in a good casing, and vice versa, are Satan's own combinations.

Protection strips save tubes from

THE MEN

This photograph shows what is probably the most representative body of automobile dealers interested in any one
Oldsmobile convention were boarding the special train to atter

LDSMOBILES

ne ever gathered together at one time. It was taken at Lansing, Mich., just as the dealers in attendance at the Wisconsin football game at Ann Arbor, Mich., on Nov. 18, 1905.

421815

rough edges, screws not thoroughly counter-sunk, etc. Use them.

Rear tires wear the most rapidly. Front and rear tires can therefore be transposed some times to advantage.

Neglected cuts and punctures admit moisture to the frabic of the casing. Decay follows. Keep your tires in repair.

If you have a suspicion that a tire is flat or becoming so, don't wait to argue with your common sense. Find out.

The style of rim used, clincher or otherwise, has nothing to do with the quality of the tire. It will pay you to remember this.

Better run on the rim, very slowly and carefully, if imperatively necessary, and the distance is very short, than on a flat tire.

Keep tires inflated so that they stand up without noticeable flattening under a full load with the car standing still. They will flatten slightly when the machine is in motion.

Rim cuts can be repaired only by manufacturers, and sometimes not at all. In this connection, remember that rims branded in the channel with this copyrighted mark have been inspected and pronounced perfect. Manufacturers garurantee their tires only on rims so branded.

THE STANDARD CURVED DASH RUNABOUT—EQUAL TO ANY EMERGENCY.

Her Choice

"What shall I bring thee, darling?
The old-time lover said
To the old-time blushing maiden,
With hoops and a powdered head,
"A cluster of dewy roses,
With hearts of fire and snow
From a tangled and mossy garden,"
She murmured soft and low.

"What shall I give you, sweetheart?"
The modern wooer cried
To the girl in silks and laces
He hoped to make his bride.
She smiled in a way bewitching,
And tapping a tiny heel.
In silvery accents answered,
"A big, red automobile."

—The Lover.

The How and Why of the Automobile

A SERIES OF PRACTICAL LESSONS

By Fay L. Faurote

(Continued from December issue)*

IGNITION

STORAGE CELL: The storage cell consists of a number of roughened lead plates immersed in a liquid usually consisting of sulphuric acid and water. The plates are chemically treated so that when an electrical current is turned into the cell a chemical action immediately takes place. When the cell is fully charged, a condition determined by the appearance of the liquid and the time and current used in charging, a certain amount of the materials in the cell will have been converted into a different form. Upon discharging the cell again a reverse set of operations takes place, and the constituents resume practically their original state.

FIGURE 62 A.

FIGURE 62 B.

The chemical reactions in the storage cell are rather complex, and we will not attempt to explain them further. Sufficient to say a storage cell simply acts as a reservoir for the current and makes a very convenient source of supply of electricity for use in automobiles and other power plants using electricity either directly or indirectly as a source of power.

Fig. 62 shows a typical form of storage cell, with its accompanying charging outfit.

When a large current is desired a great number of cells are made up to-

*This valuable series began in the March issue, back numbers will be sent upon receipt of regular price.

gether and connected in such a manner that one or all may be used at any time.

DYNAMOS AND MAGNETOS.—The third means of producing an electrical current is by the use of a magneto or dynamo. In the case of the dry cell, or storage battery, the electrical current is produced or liberated by chem-

FIGURE 63

ical action. In the dynamo, however, there is a direct conversion of mechanical energy into electrical energy.

Figs. 64 and 65 show diagrammatic sketches of the dynamo and magneto respectively. You will note that in the dynamo the field magnets, FF, are magnetized by means of a small current flowing around a "shunt" circuit; that

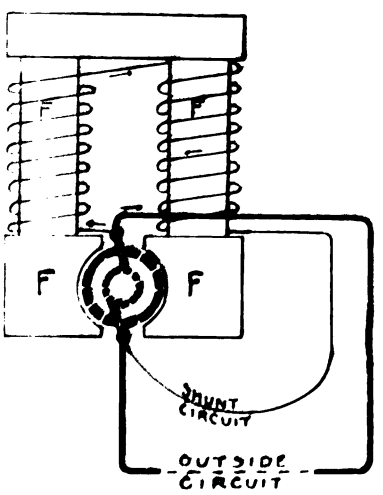


FIGURE 64
Diagramatic sketch of dynamo, note shunt circuit for magnetizing field magnets F, F.

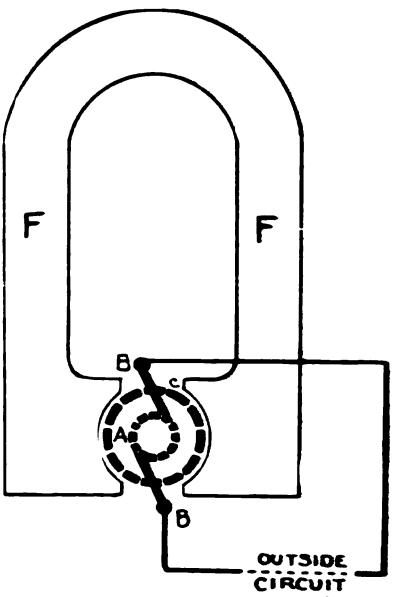


FIGURE 65.
Diagramatic sketch of magneto, note absence of shunt wire.

certain amount of current is taken from the system and used to magnetize
The remainder of the current generated is used in the outside cir-
e case of the magneto you will note that no such arrangement is

necessary owing to the fact that the field magnet is made of steel, and permanently magnetized.

With this very short explanation of the difference between a magneto and dynamo, let us look at the general theory upon which they work. It has been found that when a wire is made to cut through an electrical field that a current will be created in the wire, therefore, in order to develop a certain amount of electrical energy it is only necessary to provide an electrical field, and a number of conductors so arranged that they may be made to cut through these lines of force. For instance, if we assume that the two poles FF are magnetized, so that one is a south pole and the other a north pole, we know that there will be certain lines of force reaching from one to the other, that is, the intervening space may be termed an "electrical field." Now, if we wind a number of wires around a cylinder, or armature, as it is called, and revolve that cylinder between two poles, you can see that every time one of these conductors moves, it cuts a line of force. This, as before mentioned, creates an electrical current in the wire in a certain direction, depending upon the direction of rotation of the armature, and the way in which the wires are wound around it. These small currents will differ in direction of flow, and therefore an attachment must be provided which will correct this, and give a

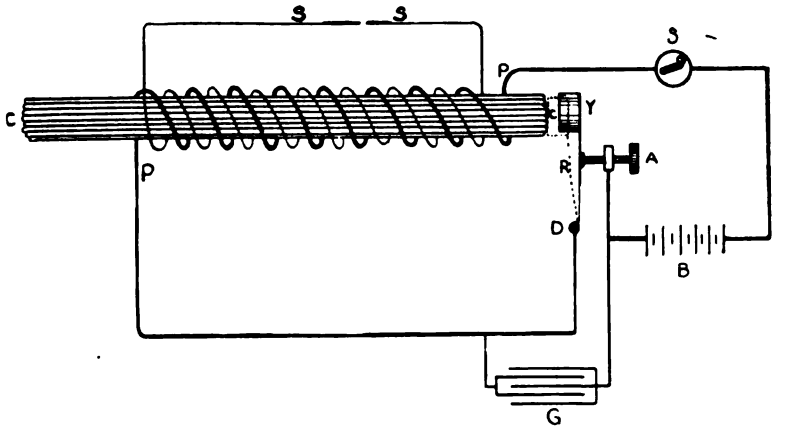


FIGURE 66.

continuous current flowing in one direction.* This is done by means of a commutator and set of brushes.

The amount of power developed in a dynamo will be proportional to the size of the wire, the strength of the magnetic field, the number of turns of wire on the armature, and the rapidity with which these wires cut through the magnetic field, or in other words, the number of revolutions per minute of the armature. Having knowledge of these various quantities, it is an easy matter to design a dynamo or magneto which will deliver a certain current at a certain voltage, when running at a certain number of revolutions per minute.

Other details relative to use of dynamo and magneto will be given later,

*For further explanation you are referred to any good book on Physics or Electricity.

when some of the actual machines in use are considered.

INDUCTION COIL.—You will remember that in the former description of induction, it was found that when two coils were wound one around another and a circuit was made, or broken, in the inner or "primary" coil, another induced current was created in the outer or "secondary" winding,

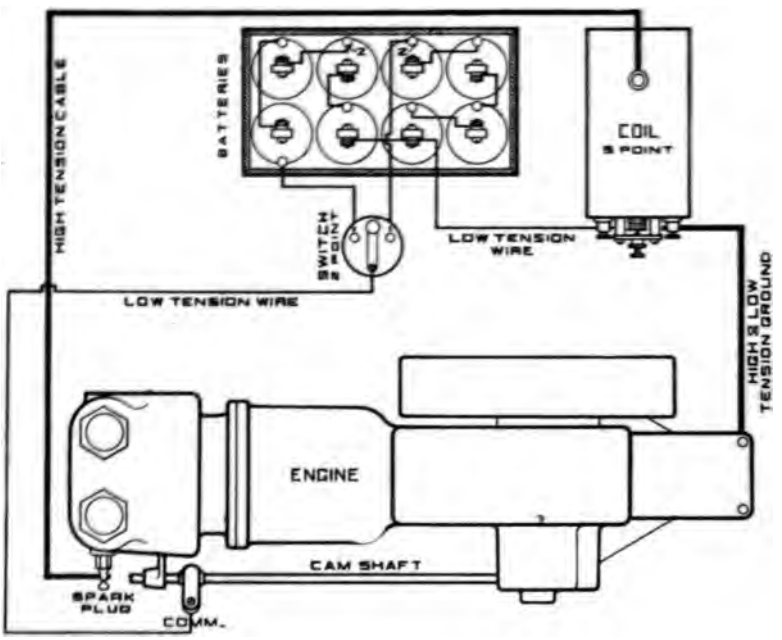


FIGURE 67.

whose voltage and amperage depends upon the sizes and number of turns of wire in the two coils. It was also noted that the introduction of a soft iron core magnet into the inner coil concentrated the magnetic field to a great extent inside of a primary coil.

Figure 65 shows a diagramatic sketch of an induction coil. CC represents the iron core composed of soft iron wires. PP is the primary winding, and SS the outer or secondary winding. You will note there is absolutely no connection between these two coils, and, as a matter of fact, they are carefully insulated by paper or rubber placed between the two coils. Y represents a vibrator, the use of which will be explained later. S is a switch used for opening and closing the circuit, and B represents a battery of five cells. A is an adjusting screw, the point of which rests against a platinum point R soldered upon the vibrator.

If the switch S is closed, the electric current generated by the battery B will travel through the primary winding. This will cause the core CC to b
come magnetized, and the vibrator Y will at once be drawn towards it. T
break the connection at R. The core, being made of soft iron, immediat
the interruption of the current, will again lose its magnetism, and
turn to its original position. Then, of course, t

again be closed and the same operation will be repeated. Thus, you will note that the current will be made and broken very rapidly, and as a result, induced currents will be created in the secondary winding. The current in the secondary will be very much higher in voltage than the original current produced by the battery, and is the one used for ignition purposes. As the number of turns of wire and the size is determined when the coil is built, there is practically no adjustment which can be made upon any part of the coil except the

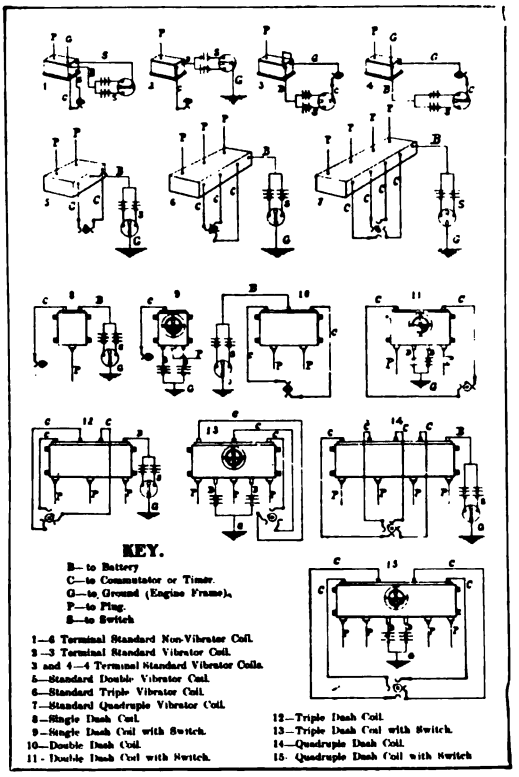


FIGURE 68.

vibrator. The rapidity with which the current is made and broken is determined by the stiffness of the vibrator spring, and this, in turn, is controlled by the adjusting screw A. Therefore, when it is desired to adjust the coil, all that is necessary is to loosen the adjusting screw A and turn it in and out until the spark between S and S1 is "fattest."

When an induction coil is used in connection with an automobile engine, a device called a commutator is used for automatically closing the circuit when a spark is desired. This automatic switch or commutator is operated by the engine itself, and so timed that it will close the electrical circuit at the time required for igniting each fresh charge of gas. Commercial coils are equipped with special devices and slightly modified schemes of wiring but they all work upon the same principle and will be very easily understood after a few minutes' examination. Very often one secondary wire is connected to one of the primary "binding posts," the object being to do away with one extra wire.

(To be continued.)

Motor Talk

A Magazine of Out Door Sports

PUBLISHED AT
DETROIT, MICH., U. S. A.

Subscription price fifty cents the year, five cents the copy. Advertising rates sent on application. Address all communications to MOTOR TALK, Detroit, Mich.

Copyright, 1906

With this issue, Motor Talk enters on its second year. Each of the past twelve months has witnessed such a consistent growth in our subscription list, the surest index of a magazine's popularity, that the future looks very bright, and we have every encouragement to add to the size and attractiveness of our publication during the coming year. Watch Motor Talk for 1906.

The annual automobile show at Madison Square Garden, New York City, Jan. 13-20, will be the occasion of some interesting conferences on the good roads problem, a meeting of the prominent good roads men of the country having been called for that week. The purpose of this meeting will be to outline a campaign for the coming year, and active measures will be taken to push the good roads movement throughout the country and especially in the East. Automobile men everywhere are waking up to the need of vigorous action, and indications are that they intend to "get busy" without further delay.

Now that the New York show is at hand, a few words relative to the selection of a motor car may be of interest. If one has a knowledge of what constitutes the most desirable qualities in a car, a decision may soon be made by a process of elimination. The most essential thing in a motor car is the power plant, and it should receive the buyer's first attention. Depending upon the size of the machine, this will consist of a single cylinder, double cylinder, or four-cylinder engine, together with the accompanying attachments. For small, light cars, the single cylinder motor is desirable for several reasons, among the most important being the simplicity, lightness, ease, and cost of operation. For machines of a slightly heavier type, commonly known as light touring cars, the two-cylinder opposed motor is winning considerable renown. The two-cylinder, four-cycle, vertical motor, is no longer being used to any great extent on account of the excessive vibration. For heavy touring cars the four-cylinder or six-cylinder motor is used almost entirely, but the four-cylinder possesses all of the good qualities of the six-cylinder, and costs much less to operate and maintain. Until recently the four-stroke cycle type of motor has been used almost entirely for automobiles, but this year the two-stroke cycle type has already gained considerable prominence. This motor practically consists of only three working parts, and it is simplicity personified. It has absolutely no valves, or valve stems, cam or gears to wear and get out of order. This type of engine has been used with great success for marine work for several years, but has never been extensively employed in automobile manufacture until this year. Many of the 1906 models are patterned after European cars, and there is a general tendency to lengthen the wheel base, and build closer to the ground. Nearly all of the large car makers are using sliding gear transmission and bevel gear drive, and it looks very probable that in a few years all cars of a higher grade will be built according to their standard construction.

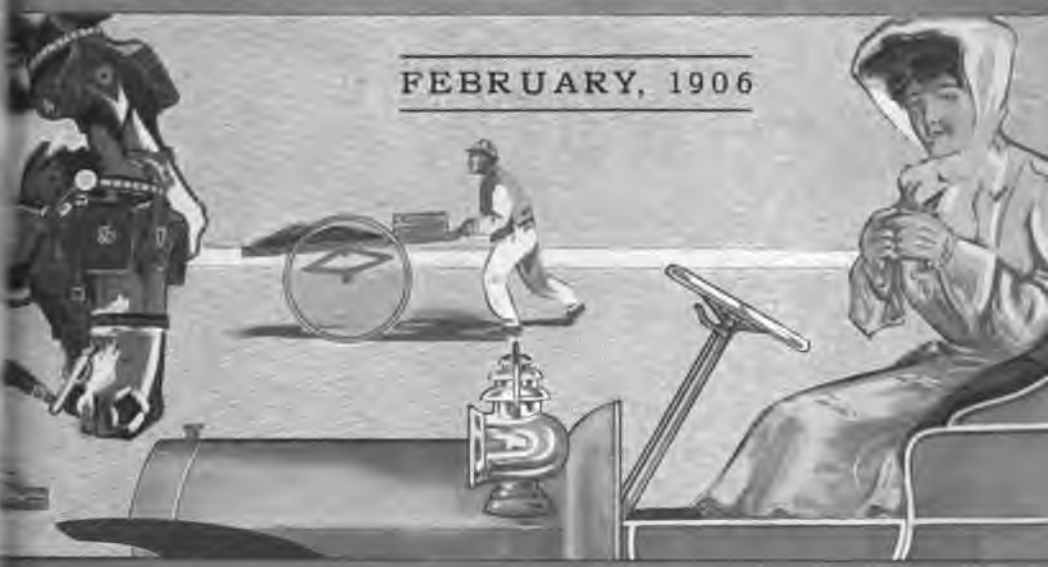
Good Advice for the Automobilist

Some good advice for drivers of automobiles has recently appeared in the public press, which if followed would greatly reduce the number of automobile accidents. The advice given cautions the driver to go slow through city streets, the towns and villages; also in passing or meeting trolley cars at rest or just stopping, and when meeting teams on the road. The latter is most important and imperative, the failure to do so conferring the title of "automobile hog." When approaching a horse that appears to be badly frightened do not fail to stop. This is the most important commandment of automobile touring. Nothing more quickly arouses the resentment and indignation of people against the automobile than a person trying to show off on the public streets how fast he can go and not run e anybody. Timid people have more rig drive timid horses on the highways the motorist has to frighten them by unreasonable speed of his machine.

MOTOR TALK

A MAGAZINE OF OUTDOOR SPORT

FEBRUARY, 1906



HUSS and the OLDSMOBILE MODEL S WHICH HE EXHIBITED IN LONDON AND PARIS.

FIFTY CENTS THE YEAR — FIVE CENTS THE

At the Madison Square Garden Automobile Show the

OLDSMOBILE

centered public interest in the Palace Touring Car and The Two-Cycle. Both of these cars emphasize the wonderful development of automobile construction in America. In style they set a swift pace for European manufacturers, and in performance they leave nothing to be desired in the way of speed, reserve power, easy-riding qualities and general all-round completeness.

The Palace Touring Car, Model S four-cylinder, price $2250

The Two-Cycle, Model L (The only novelty in Automobiles in five years) price $1250

Full lamp and horn equipment.

Careful attention to the minutest detail is apparent in every line from the perfected motor to the adjustable lamp brackets.

OLDS MOTOR WORKS

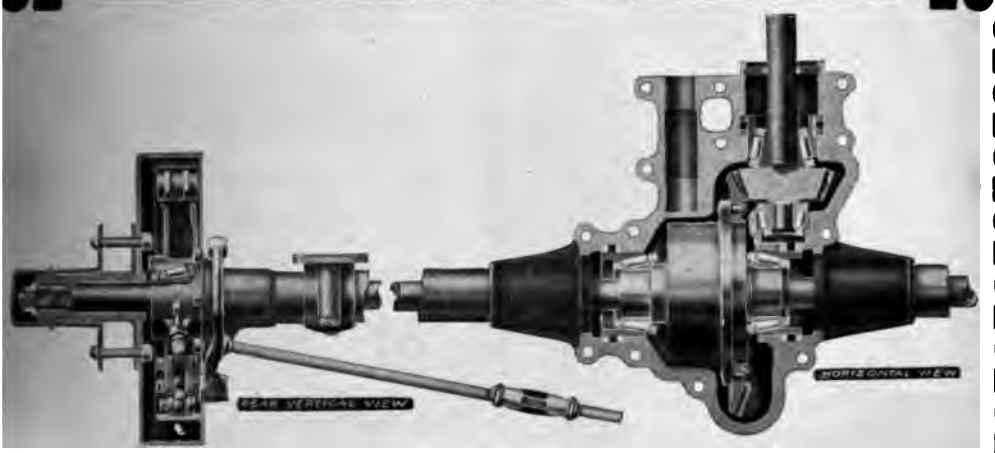
Lansing, Mich., U. S. A.

MEMBER OF ASSOCIATION LICENSED AUTOMOBILE MANUFACTURERS

AUTOMOBILE BUILDERS USING

Timken Roller Bearings and Axles

ON 1906 CARS



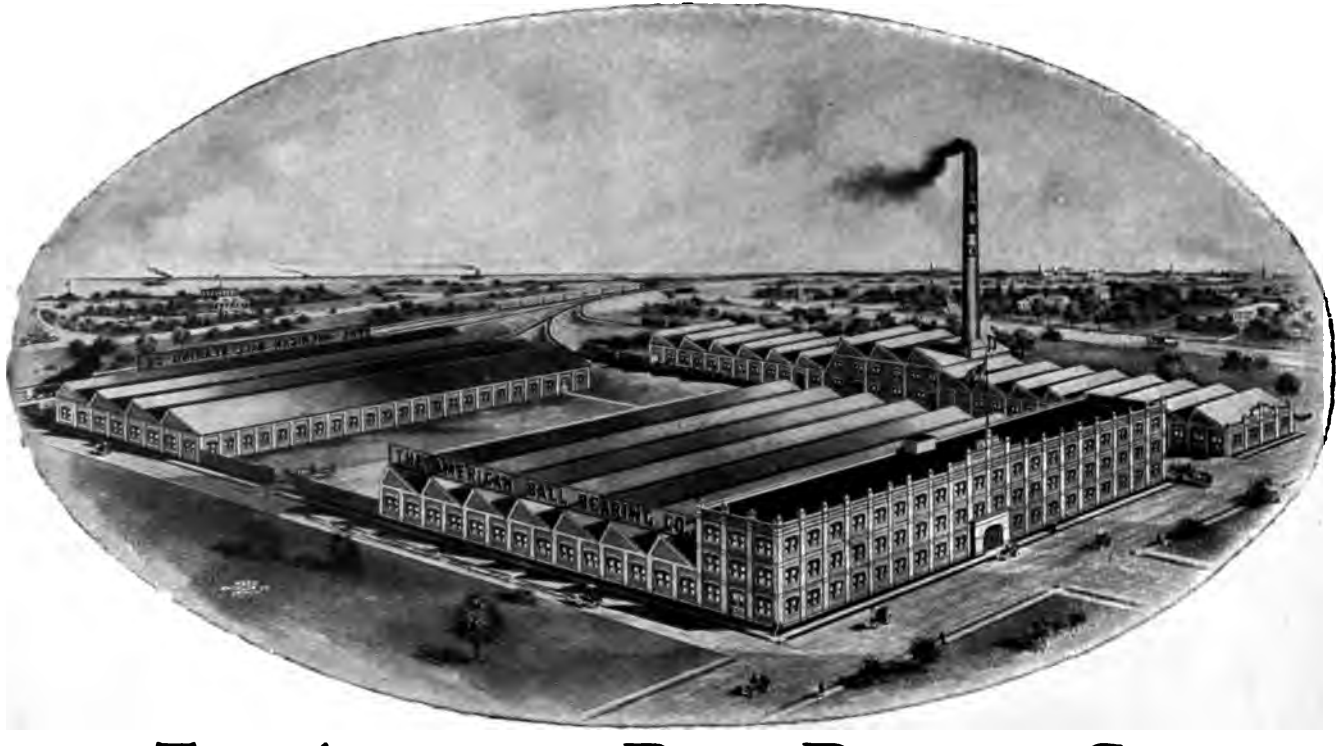
Winton Motor Carriage Co., Cleveland, Ohio.
Packard Motor Car Co , Detroit, Mich.
Pope Mfg. Co., Hartford, Conn.
Pope Mfg. Co., Indianapolis, Ind.
Electric Vehicle Co., Hartford, Ct.
Royal Motor Car Co , Cleveland, Ohio.
H. H. Franklin Mfg. Co., Syracuse, N. Y.
Knox Automobile Co., Springfield, Mass.
Knox Motor Truck Co., Springfield, Mass.
Olds Motor Works, Lansing, Mich.
Reo Motor Car Co., Lansing, Mich.
Northern Mfg. Co., Detroit, Mich.
Dayton Motor Car Co., Dayton, Ohio.
Buckeye Mfg. Co., Anderson, Ind.
St. Louis Motor Car Co., Peoria, Ill.
Oscar Lear Automobile Co., Columbus, Ohio.
Buick Motor Co., Flint, Mich.
Nordyke & Marmon Co., Indianapolis, Ind.
Acme Motor Car Co., Reading, Pa.
Dorris Motor Car Co., St. Louis, Mo.
Matheson Motor Car Co., Wilkesbarre, Pa.

Austin Automobile Co., Grand Rapids, Mich.
The Bartholomew Co., Peoria, Ill.
Michan Auto Co., Kalamazoo, Mich.
Hewitt Motor Co., New York City.
Napier Motor Co., Jamaica Plains, Mass.
Auto Vehicle Co., Los Angeles, Cal.
Rapid Motor Vehicle Co., Pontiac, Mich.
Mack Bros. Motor Car Co., Allentown, Pa.
N. Y. Transportation Co., New York City.
Ellwell-Parker Co., Cleveland, Ohio.
Berkshire Auto Co., Pittsfield, Mass.
Smith Auto Co., Topeka, Kans.
The Adams Co., Dubuque, Ia.
Louis S. Ross, Newtonville, Mass.
Gaeth Automobile Works, Cleveland, Ohio.
Dolson Automobile Co., Charlotte, Mich.
Holsman Automobile Co., Chicago, Ill.
Harrison Wagon Co., Grand Rapids, Mich.
The Adams Mfg. Co., Ltd., London, England.
And many others.

Further proof or stability and popularity of **"TIMKEN"** Roller Bearings and Axles—Forty per cent of **all** the American Cars exhibited at **both** the New York Automobile Shows were equipped with **"TIMKEN"** Roller Bearings.

TIMKEN ROLLER BEARING AXLE CO., GENERAL OFFICE AND WORKS **CANTON, OHIO**

The output of complete front and rear Automobile Axles of this plant exceeds the capacity of all competition combined



THE AMERICAN BALL-BEARING CO.

L. S. & M. S. Ry. and Edgewater Park

CLEVELAND, OHIO, U. S. A.

"Are-and-be"

Flat-Opening Detachable-Leaf Ledger

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AUTOMOBILING IN RUSSIA.— PHOTOGRAPH TAKEN ON ONE OF THE PRINCIPAL STREETS OF MOSCOW.

Motor Talk

A Magazine of Out Door Sports

VOL. II. FEBRUARY, 1906 NO. 2

The Automobile in America

A Second Paper by Mr. Frank A. Munsey on the Development of the Motor Car

From January Munsey.

LAST month I said something about the motor-car in this magazine about the French article, as I aimed to cover in a suggestive way both the direct and the indirect influence of the automobile in the French Republic. I had the idea, however, that statistics about the motor-car here in America would be easily procured, especially as I had no thought of embracing so wide a scope as in the other article.

My thought was to give facts and figures of the progress of the industry here at home, and not attempt to show, as I did with France, the vast indirect value of the automobile to the nation. The conditions that obtain in the two countries are wholly dissimilar. France is a pleasure-ground for all the world, while America is as yet a playground for her own people only. We do not draw great revenues from foreign travelers, therefore this phase of the automobile, so peculiarly important to France, means little or nothing to us.

Facts and figures about the beginning and progress of the automobile industry here at home are so conflicting, and there is such a dearth of accurate knowledge on the subject, that I cannot show, year by year, our growth in the manufacture of automobiles. The best obtainable statistics show that our output for 1905 has been about twenty-five thousand cars of one kind and another. These fgures, contrasted with those of half a dozen years ago, show the most tremendous strides of the automoblie industry in America. Then but very little capital was invested in automobile factories; now over twenty millions of dollars are employed in the business. Then we had but two or three small manufactories, merely experimental shops; today we have forty or fifty great big factories amply equipped with money and machinery and skilled workmen, and we have at the head of these factories both men of splendid executive force and those of scientific knowledge, who are bending every thought and every energy to the development of the best automobile in the world, and to its production at the least possible cost. It is in the latter respect that American ingenuity and American methods most forcefully assert themselves. This means that the American automobile will at no distant day dominate the markets of the world.

Until recently the automobile was looked upon as a plaything for the very rich and a fad of the hour. But that it is beginning

to be taken seriously is made clear by the fact that in New York State alone we now have registered over twenty-four thousand motor-cars. Just how many there are in the whole United States I have been unable to learn, but with twenty-four thousand in one State of the Union, there must be as many as one hundred thousand now in use. The uncertain period of the automobile is past. It is no longer a theme for jokers, and rarely do we hear the derisive expression, "Get a horse!"

We are not only going to manufacture the best automobiles in the world, but we are already making pretty nearly, if not actually, as high-grade machines as are produced anywhere in Europe. That the European machine has the prestige cannot be denied. It made a place for itself before we even started to manufacture automobiles, and it is difficult to overcome prestige. There is something else that works immeasureably to the advantage of the foreign car and correspondingly to our disadvantage. It is the great army of Americans who go abroad every summer and automobile there in foreign cars. They become accustomed to them, attached to them, and bring them home. The power of habit has its grasp, in automobiling as in everything else. The fact that So-and-so and So-and-so have foreign cars has an undoubted influence on other Americans in the purchase of automobiles.

But all these influences will not be able to stand against the genuine excellence of the American car of to-day with its lower price. The duty on a car coming into America is forty-five per cent., and with the expense of casing for shipment, freight and insurance, we have a total of fifty per cent., which must be added to the purchase price of a car in France. This means that one can buy an American car of the same horse-power, finish, and general excellence as a foreign car at just about half the price, or, in other words, get two American cars for what one foreign car would cost. With so wide a margin of difference in cost, it is not difficult to foresee a rapid diminution in the importation of automobiles as the quality of our own product becomes better known and further improved.

Though we were the last country to take up seriously the manufacture of automobiles, we are to-day turning out even more cars than France. Her product, however, is of greater value than our own, as the average French machine is much more expensive. Our great expansion so far has been in inexpensive automobiles. And there is a very sound reason for this type of machine. In France, as in England and Germany and Italy and Spain, there is not the vast well-to-do citizenship that we have in America. The automobile is largely owned by the very rich and the great leisure class—by these and by foreign visitors. Comparatively few men in business or in salaried positions indulge in the luxury of motoring. Their incomes do not warrant it. The motor-cycle and the bicycle are the pleasure machines of the people.

In America we have half a million men who can afford to own and run an automobile, and half a million automobiles we shall have in use here within the next ten years. Our manufacturers, realizing the difference in conditions between this country and the countries of Europe—the difference in the roads, and in the wealth and temperament of the peoples—are very wisely making automobiles that are particularly suited to America. Over eighty per cent. of them, I should fancy, are so simplified that they are independent of the mechanician. They are chauffeurless machines, machines for the half million citizens, many of whom could not afford to maintain an automobile plus the additional expense of a mechanician.

The salary paid to a chauffeur in America has an important bearing on this point. Chauffeurs' wages here are anywhere from seventy-five to one hundred and fifty dollars a month, whereas abroad the average price is about forty dollars a month. Most men, however, prefer driving their own automobiles, whether they have a chauffeur or not. It is in the running of a car, the handling of it, the feeling of command over it and its obedience to one's will that the keenest enjoyment of automobiling is found. Delightful as it is to be driven with the speed of the toboggan in a good car over a fine smooth road, it is far more delightful to be at the wheel.

In hilly or mountainous sections, where "thank-you-ma'ams" are thrown across the road every few rods, ours are the only cars in which automobiling is practicable. I use the word "thank-you-ma'ams" for the want of a better expression—I mean elevations like logs sunk into the roadbed and covered over with earth. This construction in our rude and imperfect road-building is, I believe, intended to keep the road from washing away in heavy rainstorms. It doubtless serves the purpose, but for the automobile, and particularly the low-hanging automobile of Europe, it means serious trouble, if not actual destruction.

In a run with a friend from Newburgh to New York last summer, I had a striking example of the adaptability of our light domestic cars to our rough highways. To my very great surprise we covered the distance, about sixty-five miles, in slightly less time than I had ever taken in going over it in high-priced, high-power cars. I was thoroughly familiar with the road, as

I have automobiled over it many times and in a variety of cars, including a sixty-horse Mercedes, which I owned in 1903, and which I found to be wholly unpractical and unsatisfactory for use on our roads.

The secret of my friend's good record was that he kept his car running all the while at pretty nearly full speed. He did not stop for rough places. It was not necessary. The car was made for just such roads, and was at home on them. On the other hand, with high-priced, high-power cars, one always favors them by going slowly and carefully over rocks and hubbles and hummocks, and through mud and sand. On clean, level stretches the big car can fly, but with the restrictions of the law and the scarcity of good stretches of road, it cannot make up what the little car gains on it on the great preponderance of bad stretches.

Another important advantage with the small car, in addition to the fact that it actually needs no chauffeur, is that in wear and tear, and in the use of gasolene and oils, the expense is minimized. It is probably less than one-half that of a forty-horse automobile. And in speaking of small cars, I am not going back to the period of seven and ten and twelve horse-power cars. I mean cars of from eighteen to twenty-five horse-power. Nearly three years ago I made a statement in *Munsey's Magazine* that a twenty-five horse-power automobile was the ideal machine for general touring. At that time I did not know so much about automobiling as I do now, but the experience I had had convinced me that this was a practical, economical, and yet sufficiently powerful car for any purpose.

What I said then, based on two or three years of experience and a good deal of theory, I say now as a matter of absolute certainty. A twenty-five horse-power car is strong enough, if not overweighted by an excessively heavy body, to climb up the side of a house. It can travel as fast as any one could reasonably wish to go, and much faster than the law allows, and it is safer, more easily handled, and more satisfactory in every sense. I have had automobiles ranging all the way from five horse-power to sixty, including two forties, and the machine that has given me most satisfaction is a light car that makes up to about twenty-five or possibly twenty-eight horse-power. It is alike a good short dis-

MR. GEORGE E. ROUCH, SALES MANAGER OF PACKARD ELECTRIC CO., LTD., ST. CATHERINES, ONT., AND THE OLDS MOBILE HE USES IN HIS TRAVELS THROUGH THE DOMINION OF CANADA.

A SCENE IN CALCUTTA, INDIA.

need and a good long distance car—a car that tackles a hill with the will and the power of a bulldog, and when gentleness is required is as gentle as a lamb.

In order to prove the automobile is doing more for us than it is for France. It is giving us good roads—not, of course, directly giving them to us, but it is the greatest force working for them that has ever taken hold. Everyone who tastes the pleasures of automobiling at once becomes an unconscious promoter of good roads.

France had her good roads before the advent of the automobile, and because of her good roads she gains in the aggregate, through the automobile, a tremendous annual increase for her people.

Believe the time to come when our republic shall be known as the country that America is being translated over more, vastly more, through the influence of the automobile. While we are not out drawing foreigners to our shores to spend their holidays, as France does, we are incredibly increasing the wealth of our communities through the breadth and length of the land, by the good roads we are building and those scheduled to be built.

Give us fine, broad macadam roads everywhere, and our farm lands and the suburbs of cities and villages, stretching out even to a great distance, will bound in values. Good roads eliminate distance and make neighbors of us all. So do automobiles, like railways, the telegraph and telephone, eliminate distance. Combined, they enlarge the scope of the city by a hundred miles, giving us city comforts and conveniences with the pure air and sunlight and space and freedom of the country.

The automobile has arrived. It has met the bitterest prejudices and the most deadly scoffing, and come up against stubborn and narrow laws, but in spite of these it has been developed and perfected and has triumphed. Already it has been absorbed into our civilization, even as the trolley, the electric light, and every other luxury that so rapidly crystallizes into a necessity.

With the recognition that the automobile has come to stay, prejudice generally is giving way to toleration and to reason.

It is no longer war between the motor-car and the horse. Harmony between them is the keynote of the new order of things. It is getting to be felt, too, that after all there are some pretty decent and really thoughtful, humane men among automobilists. And this feeling helps very much. Such a feeling, with a better understanding of the automobile, means better and more rational laws, more elastic laws, legislation that will suit *the motor-car*—not the kind that is based on the performance of the horse. It were well nigh as sensible to make railway laws to conform to the scope of the horse as to hold the automobile down to the hard and fast limits allowed that ancient and erratic quadruped.

As an automobilist myself, and one who is a strong advocate of motoring, both for health and pleasure, I am nevertheless unalterably opposed to the enactment of any laws that would work to the advantage of the automobilist and to the disadvantage of the public. The public should be considered first always, and then be fair and rational with the automobilist.

For example, if an automobile going at the rate of twenty miles an hour can be stopped in half the distance it would require to stop a horse traveling eight miles an hour, isn't the automobile clearly less dangerous to the public, even though moving at a greater speed, than the horse is at the lesser? If this is so, why should the horse be accepted as the standard of measurement of the speed of the automobile in and about cities and villages?

It were foolish to assume that the automobile by nature and temperament and habits is a thing to endear itself to the non-automobiling public. It has such decided mannerisms, and is withal so strenuous in action, that it strikes a jarring note with the American citizen. Its impudent air of superiority as it dashes by one on the road, its insolent toot of the horn, commanding the right of way, and the blinding, stifling cloud of dust that it leaves behind it, are undeniably antagonistic to the ideas and viewpoints to which we have been accustomed. Whatever laws and regulations will tend to bring the motor-car and the interests and rights of the general public into the greatest harmony will, I am sure, meet with approval from the manufacturers of automobiles and all true lovers of automobiling.

It is certain that the dust nuisance is one of the very worst and most objectionable phases of motoring to all the people in the country. It is not only objectionable to non-automobilists, but to automobilists themselves. It has often been urged that the automobile should have special roads, and should be ruled off the public highways. Do this and it ceases to be anything except a high-speed pleasure machine—a sort of horizontal toboggan, and as such it would soon dwindle into a very insignificant place among the inventions that have contributed so wonderfully to our present-day civilization, our present-day scope of living and doing and enjoying.

To make the automobile subservient to existing conditions, to develop it so that danger from its use will be minimized, and that the dust nuisance will be largely done away with, is the result we must strive for and must attain. And whatever will help to bring this about should enlist the thought and the best efforts of automobile manufacturers and our lawmakers. I have done a good deal of thinking at odd times along this line, with the following results:

Why not limit the power of automobiles that have the privilege of the public roads, and in addition elevate their bodies to say twelve, fifteen or eighteen inches from the ground? With the machine of smaller power, danger is greatly decreased, and with the high car the dust nuisance would be very much less. It is the car of great power, with low-hanging body, that tears up the surface of the road and sends it flying in dense clouds of dust over everything and everybody.

The low-hanging car is necessary only to great speed. It does not capsize so easily at corners and on curves. But is the public interested in fast automobiling on the general highways, and should it be subjected to such inconvenience and danger? That well-elevated cars could have ample safety with thoughtful and intelligent handling there can be no doubt.

I am inclined to predict that the time will come when the low-hanging car of to-day will be ruled off the public roads and relegated to the race-track. I am inclined to predict, too, that there must sooner or later be a limit placed on the power of automobiles for use on the highways. If not, where shall we stop—at sixty, ninety, a hundred and twenty horse-power, or even more? It seems to me that twenty-five horse-power for a light body, a light machine throughout, is pretty close to a good standard of measurement. Heavy bodies could still be increased in horse-power proportionately to their weight.

One thing more in connection with lawmaking for the automobile. It is important—tremendously important—that the State should have inspectors of automobiles, whose duty it should be to see that all motor-cars are in safe mechanical condition—that they are amply equipped with brakes and that these brakes are in perfect order. The most important thing about an automobile—more important even than the

engine or anything else—is the brake. On this depend the lives and the safety both of those in the car and of the public.

An automobile should be equipped with sufficient brake-power to make certain, at all times and under all conditions, that the car could be stopped almost instantly. Two brakes are not enough. Four are not too many, and half a dozen of different kinds and methods of application would be better yet. A relay of brakes is always necessary, as it may happen at any time that a single brake, or even two, would refuse to work. Oil renders them useless for the time, and too frequently cars go out with brakes that are worn or even broken. State inspectors, serious, honest, intelligent men, would save many human lives every year and show a tremendous reduction in the number of accidents.

The framing of laws that regulate and tend to prevent danger is quite as important to the public as are those hard and fast statutes that penalize the automobilist and drag him off to jail if he happens to run his car a bit faster than the law permits. *It would be well if our lawmakers would first learn what an automobile can do and ought to do, before saying what it shall do and what it shall not do.*

New Use for Motor Car

How an Enterprising American Newspaper Employs an Oldsmobile to Distance Its Rivals

From Street Railway Journal.

FOR years past the news companies and great metropolitan dailies have followed the custom of sending out the first or "country" edition to the surrounding communities by means of early morning express trains. Of course, in large cities, such as New York, Philadelphia and Chi- is little difficulty in securing ion facilities during the early morning, but in the smaller cities the newspapers are greatly handicapped in their efforts to secure a large out-of-town circulation owing to the more infrequent service of both the steam and electric railways.

THE CAR READY TO BE PLACED ON THE RAIL.

Some three months ago the management of the Dayton *Journal* thought it could overcome this difficulty by running a regular automobile. Several trips were made to the neighboring town of Springfield, but the pace set was too fast for the automobile and the roads too slippery; besides there were too many break-downs, and it was realized that in rainy and stormy weather the trip would be a failure. Finally the management decided to try an Oldsmobile auto-car of the type used by track inspectors. The car, as delivered, came simply with a seat and the platform. A carriage maker put a substantial frame with a glass front, awnings and other fittings; track sanders and a headlight were installed, and then the converted vehicle was placed in charge of one of the motormen of the Dayton, Springfield & Urban Traction Company. This motorman has learned to operate the car and to look after ordinary repairs, etc. A short account of the first trip of the car was published last week, but it is thought that some views and a description of its equipment would be of interest.

The car can be changed into a regular automobile by putting on wheels with rubber tires and slightly changing the mech-

anism. This car, of course, has no steering gear, as none is necessary. Its general appearance is evident from the accompanying illustrations, which show the car just after it has been taken from the garage to start on its trip. Heretofore the car has been pushed over the pavement for a few rods until it reached the street railway tracks, but in the future it will be

REAR VIEW OF THE FIRST TRACTION NEWSPAPER CAR.

kept in the traction company's car house and will be run on the car track within half a block of the *Journal* office.

There are nine traction lines in Dayton, but as there is no union traction depot as yet the first cars do not leave until 6 in the morning because they have to be kept in the car houses outside of the city. By taking 3,000 papers out at 3 a. m. each morning, the Dayton *Journal* is enabled to beat the Cincinnati and Columbus papers from one to three hours in fifteen to twenty cities and towns. This result would be impossible if the ordinary electric or steam cars were used.

Auto in Politics

From Cuban Daily.

The automobile which, during the last few years, has entered so many fields of activity, is becoming a mighty political engine, and since the real work of the campaign began with the nomination of Palma and Capote on Saturday night, the party generals have been dashing about the country with an energy never before, it is safe to say, witnessed in this easy-going land of "manana."

On Saturday night, when the moderate convention had nominated President Palma for re-election, and it was decided to go out to Camp Columbia and notify the nominee, a telephone message was sent in advance to warn him of the coming of the committee.

The committee of five then started in the car which was waiting in front of the convention hall, and arrived at the president's summer residence before the latter, who had retired, had finished dressing to receive them.

The same machine, twenty horse-power Olds touring car, driven by the popular and expert Mr. H. E. Johns, on the following day, Sunday, made an uninterrupted trip of 225 kilometers, with four of the party leaders, on political business bent, who declared when they got back to town that such smooth, swift and comfortable riding turned the arduous labors of campaigning into delightful pleasure.

Mr. Johns, who is one of the most experienced auto men in Havana, and has driven all kinds of machines, was so pleased with the behavior of his Olds car on Sunday, when it covered the long distance recorded above without the slightest hitch from beginning to end, that he declared himself emphatically regarding the merits of the machine, which caused Mr. L. G. Cone, who for some time had been hesitating as to what make of machine to buy, to send for Captain Smith, the Cuban agent of the Olds Motor Works, and, after ascertaining the price of the car, to write a check for it on the spot.

Mr. Johns will have another machine down here within a few days, until which time he will retain possession of Mr. Cone's machine in order to accommodate his numerous clientele.

Mr. Cone considers that a good automobile, in which comfortably and quickly to transport intending purchasers to the lands he has for sale, is about the best investment a real estate man can make.

As to the politicians, they intend to keep the calzadas warm from now until election day.

A PLEASANT BIT OF COUNTRY ROAD IN NORTHERN MICHIGAN.

Tearing Things Up at Ormond

The Ormond-Daytona Race Meet for 1906 has come and gone, and with it the time record of the world.

France and America divide the honors ors. Marriott, an American driving the American built Stanley steamer, made two miles in 59 3-5 seconds, while Demogeot, a Frenchman, driving a 200 h. p. Darracq, made the two miles in 58 4-5 seconds. Earlier in the meet, however, Marriott drove a mile in 28 1-5 seconds. In commenting on the event Automo-

WHERE THE RACE WAS RUN.

bile Topics has the following to say editorially:

"The finite human mind frequently fails to grasp the significance of figures. It requires a stretch of the imagination to realize what Fred H. Marriott really did when he guided his steam projectile through space on the Florida beach last week and traversed a measured mile in 28 1-5 seconds. He devoured distance at the rate of 62½ yards or 187¼ feet per second. Had he kept on for an hour at this rate he would have travelled 127¾ miles. Similarly, when Victor Demogeot drove his car two full miles in 58 4-5 seconds he traveled at a speed that would have carried him from New York to Chicago in less than eight hours, or less than half the time the boasted flyers of the most famous railroads of the world consume in performing a like journey. Keeping on to San Francisco at the same rate of speed, the eager traveler would sight the broad expanse of the Pacific Ocean in one day of 24 hours, or one fourth the railroad time Small wonder that these stupendous figures almost elude comprehension."

Mr. A. G. Batchelder writing for the Automobile, sums the event up as follows:

"The weather conditions were not as severe as those of a year ago, but the elements gave much discomfort both to onlookers and participants and made the work of the officials decidedly complex. It is no easy matter to direct contests over a fifteen-mile stretch with continual changes of timing instruments and the knowledge that the tide waits for no man. The mistakes of the previous meet were avoided, but the officials admit that improvement can be made another year. Nevertheless, the 1906 affair must be inscribed in motoring history as a notable gathering, punctuated with remarkable time, and demonstrating speed possibilities for the motor-driven vehicles second to no other means of mechanical traveling."

AT THE ORMOND-DAYTONA MEET.—OLDSMOBILE SEVENTEEN PASSENGER COACH USED AS PRESS STAND.

Rubaiyat of the Automobile

1

Wake! For the Car that scatters into flight
The Hens before it in a flapping Fright,
Is now the straight of to your Door, and bids you Come
Out for a Morning Hour of Sheer Delight.

2

Would you but know this Glorious Game,
At Motor Parts seem dry and dull and tame
This is the ultimate, triumphant Joy,
A Automobile Elation, as its name!

3.

Would you your Last remaining Thousands spend
About the Secret? Quick about it, Friend!
A hair perhaps divides This make from That
And on that Hair, pritzee, may Life depend!

4

Let one a hundred Models brings, they say
To Out Who have the Car of Yesterday?
And every mail brings in New Catalogues
That make a Last Year's Model fade away!

5.

Waste not your Hour in the Vain pursuit
Of Demonstrators who will loud Dispute:
This one is Best because It's painted Red!
That one because it has a Sweeter Toot!

6

Were at at Saratoga or Babylon,
Whether the Car shall jerk or smoothly run,
The Wine of Life is in the Motor Trip:
Through all the Parts keep breaking one by one!

7

Indeed with my big car I've run so long
It seems to me there's Always something Wrong
Fouls Ignition or a Leaky valve
Or maybe the Compression is too strong.

8

Then to the Laughing Face that lurks behind
I, I lifted up mine Eyes to find
Smiling Lips demurely murmuring,
I don't See why you ever bought This kind!

9

Myself, when young, did eagerly frequent
Garage and Club—and heard much Argument
About it and about—yet evermore
Came out more Addled than when in I went!

10.

Indeed, I've learned to treat it as a Joke
When Nuts work loose, or Carburetters choke,
And then, and then—the Spring, and then the Belt:
A Punctured Tire, or Change Speed Lever broke!

11.

A Look of Anguish underneath the Car,
Another Start—a Squeak—a Grunt—a Jar!
The Aspiration Pipe is working loose!
The Vapor can't get out! And there you are!

12.

For I remember Stopping by the way
To tinker up the old Machine one day,
And with a Reckless and Unbridled tongue,
I muttered—Well, I wouldn't like to say!

13

When suddenly an Angel Shape was seen
Approaching in an Up-to-date machine,
Bearing a Vessel which he offered me,
And bid me smell of it. 'Twas Gasoline!

14.

The stuff that can with Logic Absolute
The Two-and-Seventy jarring Parts confute:
The sovereign Alchemist that in a trice
A drop of Oil will into Power transmute.

15.

Strange, is it not, that of the Myriads who
Have empty Tanks and know not what to do,
Not one will Tell of it when he Returns!
As for Ourselves—Why, we deny it, too!

16.

We are no other than a Moving Row
Of Automobile Cranks that come and go.
And what with Goggles and Talc-win-
In Motoring Get-up, we're a Holy Show!

17.

But helpless pieces of the Game bestowed

AUTOMOBILING IN MEXICO. THE PRESIDENT'S SECRETARY IN OLDSMOBILE LIGHT TONNEAU CAR. TO THE LEFT IS A CURVED DASH RUNABOUT WITH COUPE TOP.

Upon the Checker-board of Hill and Road;
Hither and Thither moved and sped and stopped,
And One by One back to the Garage towed.

18.

The Car no Question Makes of Ayes or noes,
But Here or There as suits its Fancy goes.
But the Bystander, offering Advice,
He knows about it all—He knows—He KNOWS!

19.

And if in Vain down on the stubborn Floor
Of Earth you lie. And weary, cramped and sore,
You gaze to-day; you may as well be Sure
To-morrow 'twill be Worse than 'twas Before!

20.

And that Inverted Man, who seems to lie
Upon the Ground, and Squints with Practis'd Eye.
Lift not your hands to him for Help. For he
As impotently works as you or I.

21.

Whereat some one of the Loquacious lot
(Who seem to rise up, jeering, on the Spot!)
Butts in and says, "You'd better test the Coil,"
"Your Exhaust Valve Spring's broke," or "Crank Head's hot!"

22.

And this I know. Though in the Magazine
Perfectly Running Motor Cars I've seen
It's quite a Different Proposition when
They're on the Road, and filled with Gasoline!

23.

The Moving Motor speeds, and having Sped
Moves on. Nor all the cries and shrieks of Dread
Shall lure it back to settle Damage Claims,
Not even if the Victims are Half Dead!

24.

And When at Last you've mastered Valves and Bolts,
When with no fear of Side-slips, Jars or Jolts,
Your Forty H. P. Racer licks up Miles
At Meteor Speed, turn on a Few More Volts!

25.

Then in your Glorious Bravery exult!
When your Car plunges like a Catapult,
Sit Tight, Hold hard, pass everything in Sight!
And you will be Surprised at the Result!

HOW THE ARMY CYCLE MFG. CO., OF CHARLESTON, S. C., MOVED. HELD UP ON RATES BY EXPRESS PEOPLE THEY CONVERT AN OLDSMOBILE LIGHT TONNEAU INTO TRUCK AND DO THEIR OWN WORK.

HOW THE ARMY MFG. CO. MOVED. SHOWING LAST TRIP ON WHICH THE DETACHED BODY WAS CARRIED TO NEW QUARTERS.

Automobile Philosophy

By May Irwin in Theatre Magazine.

My experience with the automobile has opened my eyes (to say nothing of my pocketbook), to its importance as a factor in economics. I use the term "economics in a general, civic and industrial sense, because the automobile is by no means economical. This is a discourse on political economy and not domestic economy. (For points on the latter, see May Irwin's "Home Cooking.")

Those who condemn the auto as a menace to society are not thinking persons. Reflect on all who are given employment since the advent of this industry! Besides those directly employed in the automobile's manufacture, think of those who depend upon it, directly or indirectly—chauffeurs, steel manufacturers, pawnbrokers, divorce lawyers, comic opera librettists and press agents.

It is not necessarily a champagne appetite with a beer income that causes financial and domestic distress; Mr. Schlitz, Mr. Budweiser and Mr. Wurtzburger can well afford champagne on their beer income. It is trying to keep an automobile wife on a wheelbarrow salary that helps the pawnbroker and divorce lawyer.

Before buying an automobile, it is well to keep the following in mind:

A rolling automobile gathers no bank account.

People who ride in white automobiles shouldn't throw mud.

An auto under control is worth two in the ditch.

When angry, blow your horn; when very angry, run over a policeman.

He who speeds and runs away will live to get it on the neck some other day.

The auto shows which way the millionaire blows.

One bad turn deserves another chauffeur.

It takes nine tailors and one automobile to break a man.

Hell is paved with thick sand and broken glass for the scorcher.

Still autos run over people.

Parcel Mart

APPRECIATED BY THE DOCTOR'S ENTIRE FAMILY.—*Courtesy of Horseless Age.*

in the State of Connecticut. The embankments especially, one of which I saw twenty-two feet high and over 500 feet long, removing completely one of the severest hills on any highway in the State, are of great interest. I remember most particularly this improvement, although I saw many others of less magnitude, each having received the treatment necessary. The commissioner tells a little story about Farmer Jones loading his wagon with bales of hay for the market. The wagon is pretty well filled, but as the hired man is about to put on the last few bales Farmer Jones says, "Stop, John, you have to climb Deacon Smith's hill, and you had better leave them here for another load. I'm afraid you won't get up." And so the hired man drives eight miles lightly loaded in order that his team can pull over a hill which is perhaps not more than a few hundred feet long at the utmost, and is required to come back for the remainder of his load, at a loss of just so much time, when perhaps $500 judiciously used would remove the evil for all time. Just so in the early days of automobiles. The question was always asked, "Can it climb a hill?" That was the first consideration. Now that the power is adequate for any ordinary hill, and even much more than is necessary, so that they climb hills almost as fast as they can go on the level, the cry is for good road surface, but when the demands of the commercial vehicle are heard and it is a question of carrying weight, the grade is still all important. For instance, the railroad which has a severe grade to negotiate is at a tremendous disadvantage over the system that is more level, and how many millions have been spent in building tunnels and in lowering the grade of railroads! Is it not a part of wisdom and foresight to strike at once at this vital point, and then when the surface is ready to be put down it will not be necessary to have all the expense of changing its location. Do not let me leave the impression that all the work is being done in this direction. Connecticut has as many, if not more, miles of macadam in proportion to her total mileage than any of her sister states, some of which have been down ten years and over, and besides as many miles of the most perfect gravel roads I have ever seen constructed, and these roads are equal, and in some respects superior, to stone roads, especially where the gravel is not so heavy, being much cheaper to build and retaining a perfect, even surface. This also enables the towns which have not the advantage of so much money, to have a splendid surface

AN ENGLISH COMMERCIAL CAR.—*Courtesy Colliers Weekly.*

over all their town system at a very much reduced cost.

The first day's ride was full of varied experiences. We went to one town where pipe was being laid where a new road location was to go, and the commissioner gave them the direction, showing where the new road was to be put down, incidentally flattening the curves and allowing for fills and cuttings so that in future laying of pipe or repairs the road would not be injured. We then went to another town, where the magic touch of the commissioner was leveling one of the steepest hills, a byword among the farmers in that vicinity. Then we went to another town, and called up the first selectman, who was the contractor, and taking him with him, the commissioner walked over a piece of road improvement which was ready for his official action. The way that road was criticised and accurately inspected would be an inspiration to anyone to do his very best work. With tape he measured the width of every doubtful point, and with his well trained eye sighted for wavy surface. He called the attention of the selectman to the proper angle of repose of the banks in the cutting, and showed him where in this place it bellied out a little, a sure sign that all the material above the proper plane would be washed down into the gutter and have to be scraped out at the town's expense. Here attention was called to the side walls of a culvert which were not parallel with the run of the road in a diagonal direction. When it came to placing railing on these culverts, how would it look to have them pointing off into the field? We also saw one farmer whose house had been left some ten or twelve feet above the level of the road and there was the question of what was the best way to arrange the approach to his farm dwelling.

A little further on where there was a large embankment the house of a most estimable lady was about five or six feet below the level of the finished road. This dear old lady, with her old fashioned shaker sunbonnet and costume of over forty years ago came out. "Mr. Commissioner, my demands are not exorbitant, but what am I going to do when that steep bank is all covered with ice in the winter time and some friend wishes to drive up to my door. The wagon will turn over, sure, if they try

to come down that steep place." Such are the trials and tribulations of the one who seeks to obtain the result that will bring the most good to the largest number. Needless to say, these apparently serious matters were solved in a most pleasant manner, leaving a pleasant feeling behind and a sense of being benefitted rather than injured. So it was all the way along. My attention was constantly attracted to this point and that point. All the views of interest and the beautiful vistas my companion seemed to know like the beautiful pictures in some gallery of the masters. From luncheon in an old inn at Saybrook, to our evening sessions, where the selectmen, around the hotel table, gave me a good opportunity to study the character of these honest husbandmen, every minute was full of useful information. I remember one very forcible inspection of the commissioners. It was on a section of highway that had a beautiful stretch of new gravel road where a trolly track was being built along the side, and there were great heaps of sand, stone and dirt thrown up in piles in the middle of the roadway. The commissioner's indignation knew no bounds. It was just as if this material had been piled on a new carpet in his parlor. The feeling was of almost personal injury to have the beautiful surface of a finished but unaccepted road covered over in this way. Needless to say, the contractor in charge had his men all turn to at once and shovel these piles of refuse off as soon as possible. On we went over all kinds of roads, through short cuts, over hills, down beside rushing torrents, through beautiful groves of pines sighing in the wind. One evening quite late we came upon a piece of road where the laborers were throwing moldy earth in the center, which the commissioner immediately detected, and searching for the "boss," the earth that was not suitable for such a purpose was immediately removed, the commissioner suggesting it would be good material for an onion bed but not a bed for a road. If it had remained there it would always have been a quagmire almost impossible to correct. A little further on we came to another piece of road improvement, and during the inspection it seems the gutter line was very crooked; and as the first selectman put it, "it was so gol darn crooked that if a black snake tried to follow down that there gutter he would snap his tail off." So we went

AN ENGLISH COMMERCIAL CAR.—*Courtesy Collier's Weekly*

on over contract after contract, until finally the first thing I knew it was Sunday morning and the week so pleasantly spent was closed by our arrival at the commissioner's house in New Haven.

The next day, upon looking over our route and calculating our expenses I found that we had traveled more than 350 miles at a cost of $15.05, making the cost per passenger per mile 2 1-10 cents, including storage, washing, oil and gasoline, having made thirty-one inspections and been in nearly seventy towns in the State. The commissioner asured me that if he had gone in his usual manner it would have required more than two weeks to accomplish the same work and it would have been considerably more expensive for transportation, costing $5.00 a day for a team, and thirty-one inspections, with railway fare included, would make the expense upwards of $50 for this item alone, without taking into consideration the great saving in time.

When we realize that a ten-passenger bus of 16 h. p. has just completed, in a motor test, 682 miles, at a cost of $29.30, or less than half a cent per passenger per mile, as well as a 4-passenger 8 h. p. car the same distance at a cost of $13.54, or half a cent per passenger per mile, against the railroad fare of $14.53, or about 2 1-2 cents a mile, we are awakened to the fact of the wonderful use possible of the improved highways and the tremendous economy on freight and passenger transportation to come when mechanical vehicles are in general use on the road systems of the country.

We met a great many teams driving on the road and it was with a great deal of interest that we saw how few horses pay any attention to a motor car. Whether it was because the car we used, being a steam car, was very quiet, I do not know. We had to travel over some of the roughest roads in the State. Some roads were not traveled at all, and I saw a great deal of most beautiful scenery in the northwestern part among the foot hills of the Berkshires.

A DAKOTA DOCTOR WHO USES AN AUTOMOBILE TO ADVANTAGE.—*Courtesy Horseless Age.*

AUTOMOBILING IN RUSSIA—RUSS CHANGES PLACES WITH THE COSSACK.

Motor Talk

A Magazine of Out Door Sports

PUBLISHED AT
DETROIT, MICH., U. S. A.

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Editor's Talk

The series of practical articles on "The How and Why of the Automobile" by Fay L. Faurote, will be resumed in the March issue.

The notable success attendant on the various automobile shows indicate for 1906 the most successful season in the history of the automobile industry.

"Probably no better solution of the New York show question would have been possible than that which has been brought about by the coup of the Association of Licensed Automobile Manufacturers in securing the Madison Square Garden building, and the consequent decision of the Automobile Club of America to hold an independent show in the neighboring Armory," says the Horseless Age editorially.

"The spirit of competition which the division of exhibits into two rival shows engendered had a most happy effect. From the first the organizing management of both shows has been much more systematic and businesslike than the exhibitors were accustomed to in former years.

"The idea of uniform decorations installed by the show management (which originated, we believe, in Boston) is certainly a happy one."

In R. F. D. Service

A. H. Helgesen, R. F. D. carrier No. 5, out of Montevideo, Minn., in a recent conversation with a MOTOR AGE representative, spoke in the following terms on the work he is doing with an Oldsmobile runabout in covering his route: "My route is 24 miles. In making the trip I require two to two and one-half hours, and never over one gallon of gasolene on good roads. Then the machine does the work of a team of horses, but in very bad weather and on poor roads I do not use it at all. The expense is greater than a team when I run it all the time. Here are a few of the expense items I have had to face: General repairs, $30; new carbureter, $12; new chain, $8.40; special improvements of my own, $10; new tires, $62. The advantage in using the automobile is in the time saved and in drawing trade in other lines that could not otherwise be secured. All through I am pleased with the machine." This machine has been in use for sixteen months. The daily start on the delivery trip is at 2 in the afternoon with sixty-four mail boxes to be visited. The trip is finished in two hours, but when horses are used the start is made at 1 o'clock and the finish made after 5. The car often covers 120 miles a day, in addition to the regular mail route, when other work is being done.

Make Way for the Auto

That projected automobile highway between London and the sea at Brighton is a move in the right direction. When it became evident that the steam locomotive and its train were to be a big factor in the future of mankind, there was no delay in arranging that it should have its own highway. And now that it is clear that the automobile is to supplement, if not some day entirely to supplant, the other means of long-distance transportation, the sooner we set about providing for the new development, the fewer lives will be lost and the more quickly will everybody begin to reap the enormous potential benefits.

A four-track highway between Philadelphia and New York would be a good starter: two tracks for the speeders and two tracks for the slower goers, including, of course, freight and parcels and delivery-wagon autos.

Alex Schwalbach, writing for *Leslie's Weekly*, says: "For the coming winter side doors on the front seats will be the proper thing in motor-car equipment. They have been made popular in Europe, and one of the prominent American cars has a new design of body which includes this feature. The doors will keep out cold, mud, and water."

AN EASY WAY TO GET WHERE GAME MAY BE FOUND IN PLENTY.

run four or five gravel and shell roads through the prairie lands, crossed here and there by small streams and wooded patches. To the west some half dozen gravel roads extend to the rice fields and Brazos River bottom. On any of the roads the automobilist may find smooth traveling for from 15 to 50 miles.

Until a few years ago the Houston sportsman was wont to make weekly trips, generally on Sunday, to some of the outlying districts, for a day of sport; but there were many, especially among the business classes, who were restricted by the lack of convenient transportation facilities. It is with this class that automobile hunting originated, and has since become popular. The originator of the idea, perhaps, is a well-known sportsman and automobilist, who at first began making short trips to his rice farm on the Richmond road, some few miles west of the city, where he would often spend the afternoon shooting snipe or quail. The practice suggested the use of the car for more extensive trips, and since that time many of the Houston sportsmen have purchased cars to be used for no other purpose than that of hunting. At first most of the trips were short ones into nearby territory; but it is not uncommon now for the hunter to go the entire length of the county, and Texas counties are not small, in quest of sport.

A trip which was made a year ago will show why the business man should prefer the automobile to the train or wagon in making a short hunting trip. A party, among whom was the foreman of the printing department of a morning paper and a reporter for the same paper, left Houston at 4 o'clock in the morning after the day's paper had been issued. The car was run out east of the city some 17 miles to the San Jacinto River bottom before daylight. With the dawn of day a fine buck was shot by one of the party. A short while afterward duck shooting was found in the bottom lakes, and after sun-up quail shooting was indulged in for an hour or so. The game was plentiful and the party secured a good bag in time to get back to town shortly after noon. In that manner these office men were enabled to get a few hours' recreation at outdoor sport without greatly interfering with their work, a thing that would have been impossible had they been obliged to wait on train schedules or to travel by buggy.

The "Invasion of the West" is typical of the invasion of the North, South and East by the

OLDSMOBILE

Here are the facts: We are to-day shipping Oldsmobiles to nearly every civilized country, and some half civilized ones. Russia for the last three years one of our best foreign markets, is taking more cars to-day than before the present trouble broke out. We have met European manufacturers on their own ground and have "made good."

Our Palace Touring Car, Model S, is the "top notcher" of 1906. It is a genuine American car, discounting European product at Wall Street rates. Send for booklet telling how we have packed more style, speed, stability and *brains* into Model S for $2250 than can be found in any car in the world for anything like the same money.

The Double-Action Olds is a car with two working strokes for every revolution of the crank. It's the *"latest"*--the*"new thing"*—in automobiles. It is free of valves, guides, cams, and other mysteries that usually terrify the uninitiated. It s motor has *only three working parts.* It's a giant for hill climbing and difficult roads. It s price, $1250. Write for our "Double-Action" Booklet.

OLDS MOTOR WORKS

Lansing, Mich., U. S. A.

Member of Association Licensed Automobile Manufacturers

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CATALOG COUPON

Kindly send me information regarding cars checked. I am interested.

Model H — Delivery Cars
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Name

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CALENDAR COUPON

Enclosed find 10 cents, for which send your large Art Calendar (free from advertising and suitable for framing) for 1906. Design by George Gibbs S. M.

Name _____

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MOTOR TALK COUPON

Enclosed find 25 cents, for which have MOTOR TALK, a magazine devoted to automobiling, sent to me for 1 year. S. M.

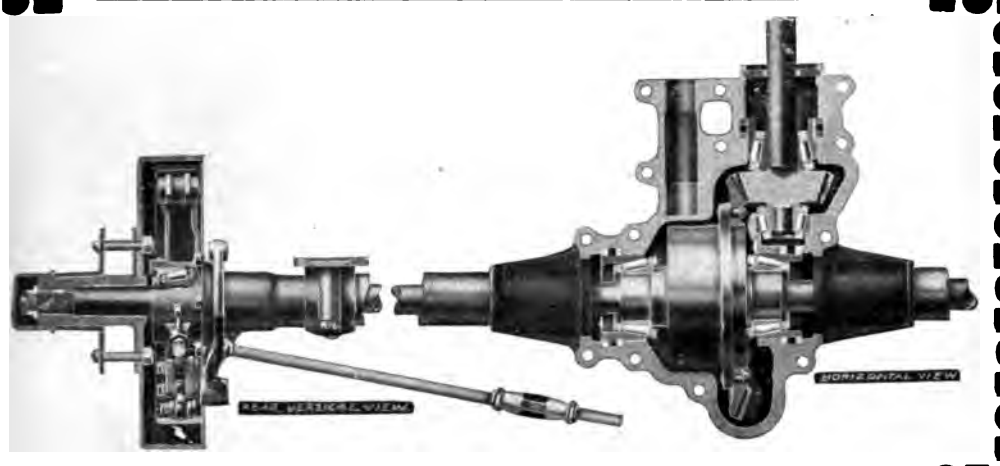
Name _____

Address _____

AUTOMOBILE BUILDERS USING

Timken Roller Bearings and Axles

ON 1906 CARS



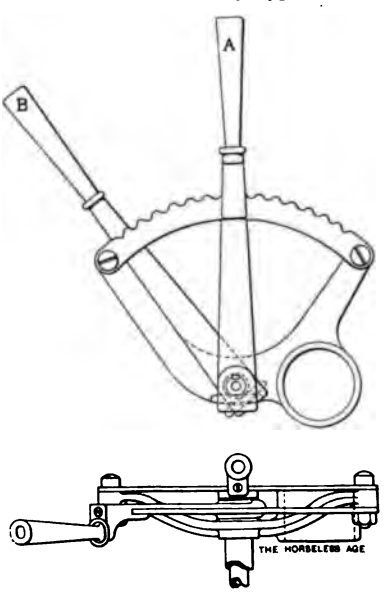
Winton Motor Carriage Co., Cleveland, Ohio.
Packard Motor Car Co , Detroit, Mich.
Pope Mfg. Co., Hartford, Conn.
Pope Mfg. Co., Indianapolis, Ind.
Electric Vehicle Co., Hartford, Ct.
Royal Motor Car Co , Cleveland, Ohio.
H. H. Franklin Mfg. Co., Syracuse, N. Y.
Knox Automobile Co., Springfield, Mass.
Knox Motor Truck Co., Springfield, Mass.
Olds Motor Works, Lansing, Mich.
Reo Motor Car Co., Lansing, Mich.
Northern Mfg. Co., Detroit, Mich.
Dayton Motor Car Co., Dayton, Ohio.
Buckeye Mfg. Co., Anderson, Ind.
St. Louis Motor Car Co., Peoria, Ill.
Oscar Lear Automobile Co., Columbus, Ohio.
Buick Motor Co., Flint, Mich.
Nordyke & Marmon Co., Indianapolis, Ind.
Acme Motor Car Co., Reading, Pa.
Doris Motor Car Co., St. Louis, Mo.
Matheson Motor Car Co., Wilkesbarre, Pa.
Austin Automobile Co., Grand Rapids, Mich.
The Bartholomew Co., Peoria, Ill.
Michan Auto Co., Kalamazoo, Mich.
Hewitt Motor Co., New York City.
Napier Motor Co., Jamaica Plains, Mass.
Auto Vehicle Co., Los Angeles, Cal.
Rapid Motor Vehicle Co., Pontiac, Mich.
Mack Bros. Motor Car Co., Allentown, Pa.
N. Y. Transportation Co., New York City.
Ellwell-Parker Co., Cleveland, Ohio.
Berkshire Auto Co., Pittsfield, Mass.
Smith Auto Co., Topeka, Kans.
The Adams Co., Dubuque, Ia.
Louis S. Ross, Newtonville, Mass.
Gaeth Automobile Works, Cleveland, Ohio.
Dolson Automobile Co., Charlotte, Mich.
Holsman Automobile Co., Chicago, Ill.
Harrison Wagon Co., Grand Rapids, Mich.
The Adams Mfg. Co., Ltd., London, England.
And many others.

Further proof or stability and popularity of **"TIMKEN"** Roller Bearings and Axles—Forty per cent of **all** the American Cars exhibited at **both** the New York Automobile Shows were equipped with **"TIMKEN"** Roller Bearings.

TIMKEN ROLLER BEARING AXLE CO., GENERAL OFFICE AND WORKS **CANTON, OHIO**

levers. The shafts of the two levers are both tubular and concentric, and at their lower ends are provided with lever arms, connecting by links to the throttle and spark timer respectively. The throttle lever is connected with an accelerator pedal in such a manner that the speed of the engine can be adjusted by the lever and accelerated by the pedal, but as soon as the pedal is released the speed will automatically come down to the point determined by the lever adjustment.

The front axle is a bent steel tube, and the steering pivots are arranged to give an inclination of two degrees to the front wheels. The front wheels are fitted with Timken roller bearings on the hubs. The wheels are of the artillery type, 32 inches



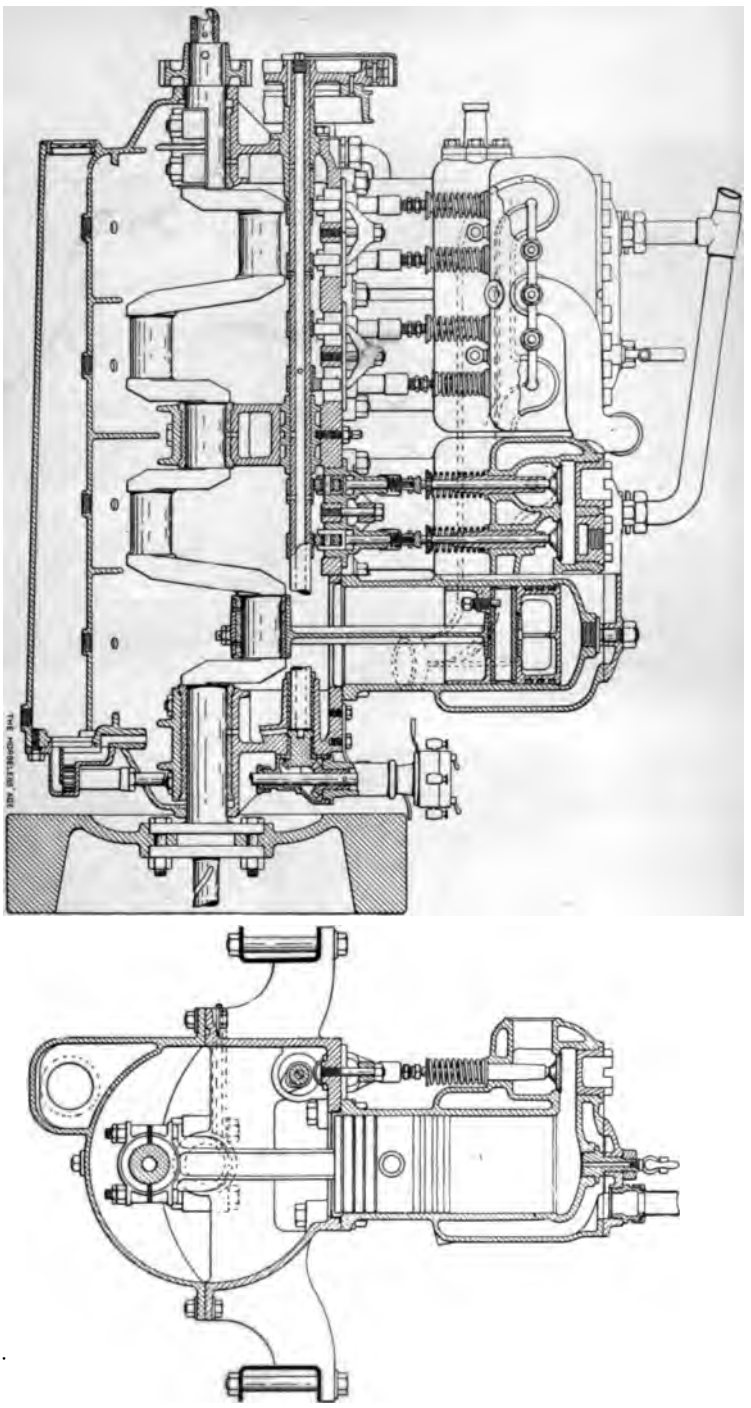
ENGINE CONTROL LEVERS.

A, Spark Lever; B, Throttle Lever.

in diameter, and fitted with 3½ inch front tires and 4 inch rear tires. The front wheels have ten spokes each, the rear twelve. The frame is carried on semi-elliptic springs, 36x2 inches front and 48x2 inches rear. It is of pressed steel construction, with channel section side members 3½ inches deep. A pressed steel sub-frame of the same section as the side frame is provided for carrying the engine and change speed gears. Sheet metal plates are securely riveted between the sub-frames and side members, which in conjunction with a half-cylindrical sheet steel shield bolted below and between the sub-frame entirely protect the motor and transmission mechanism from mud and dust. The car has a wheel base of 106 inches and a standard tread. Brackets are riveted to the sides of the main frame for supporting the mud guards and running board irons, the brackets being reamed out with a Morse taper reamer, and the irons clamped in place by nuts.

The cylinders are of 4¼ inch bore by 4¾ inch stroke, and the engine is rated at 24-28 horse power. The cylinders are cast in pairs with integral heads, valve chambers and jackets, and are formed with flanges at their lower ends by which they are bolted to the aluminum crank chamber. In connection with the joint of the cylinders to the crank chamber it may be mentioned that it is effected by cap screws with nuts, no reliance being placed on threads in aluminum. It will be noticed from the drawing that the water space of the jacket is very liberal, and that it completely surrounds the valve box. The top of the jackets is closed by a cover plate, which is clamped in place by means of two steel fittings, one in the centre of each cylinder head, into the outer end of which the compression cocks are screwed. These fittings are screwed into the cylinder heads, a flange of them abutting against a boss formed on the heads, and the cover plates are then passed over the fittings and clamped in place by nuts screwed over the outer ends of the fittings.

The crank is of the three bearing type, and is hung from the upper half of the aluminum crank chamber. It is made from a drop forging of special steel, and its bearing surfaces are ground to size. The front bearing is 3½ inches long, the centre bearing 3 inches, and the rear bearing 5⅛ inches, while the crank pin bearings are 2¾ inches long. A flange is forged on to the rear end of the crank shaft, to which the flywheel is bolted. The connecting rods are I section drop forgings, and are provided with separate caps at the crank pin end, shims being interposed between the head of the connecting rod and the cap in order to allow of ready adjustment for wear. An inspection of the drawing will show that the connecting rod is designed with a view to eliminate all unnecessary weight. The crank pin end is provided with a Parsons white bronze bushing, while the wrist pin end is provided with a hardened and ground steel bushing, the wrist pin being also hardened and ground, and made hollow to reduce its weight. The wrist pin is held in place against lateral movement by a shoulder screw in one of the piston bosses, which is secured by a cotter pin on the inside of the hollow wrist pin. The pistons are 5 inches long, and are



SIDE AND END SECTIONAL ELEVATION OF ENGINE.

ONE OF THE PLEASANT HIGHWAYS OF OLD MEXICO.

Motor Talk

A Magazine of Out Door Sports

VOL. II. APRIL, 1906 No. 4

Up the Catskill

An Oldsmobile Trip Through One of the Most Interesting Bits of Country in America

Reprinted.

THERE is nothing I like so well as work, and plenty of it, and having heard so much about the vast amount of work required to keep an automobile "going," I concluded to purchase one. Not being very wealthy, I bought an Olds Runabout in June, 1905, and proceeded to exercise myself in it.

My first trip was up in the country about fifteen miles north of this city on the Old Huntington Road. My wife, who was accompanying me, asked: "Why do you select the roughest and hilliest road there is to begin on?" I answered: "I want to see if I can break this machine to pieces and then have the work of repairing it again" (for I do love work). She said: "I do believe you will, the way we are going over rocks and 'thank-you-marms.' Why, it is all I can do to keep my seat."

After going a few miles farther we came to Derby and then started home again upon as fine a road as one could wish, and I thought I would see if the little machine had any speed in it, so I let her out, and the speed was so great I was afraid to open up the throttle wide, as we were then running at least thirty miles an hour. At this point my wife said: "There is a big touring car coming and you had better let them by by, as they have been trying to pass us for some time." "Why," says I, "that car could leave us way behind in no time." Just then the car passed, and I saw it was a 16-horse-power touring car of a well-known make, and feeling a bit sporty with my new curve dashed runabout, I thought I would have some fun. I ran up alongside and kept there for some distance with the other machine doing its utmost to leave me. I then opened the throttle wide, and to my delight I began to pull ahead, and in the next half mile I had left them several hundred yards behind. I was greatly pleased, for if there is anything the owners of big cars dislike it is to have a little car outdistance them, and they never let one go past if they can help it. I have since had this same experience many times.

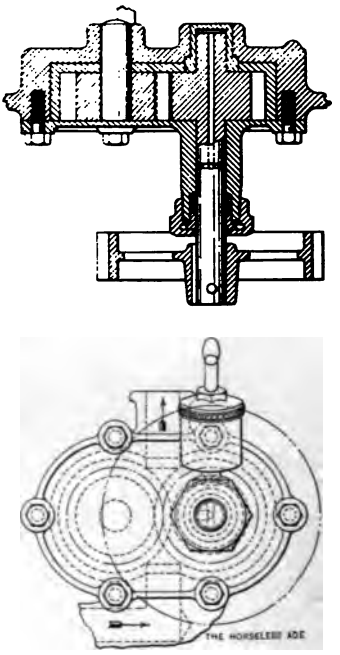
We arrived home much elated after our first ride, and told the family: "We are going up over the Catskill Mountains with that car just as soon as I can get my vacation." So, in a few weeks, the weather being fine, I made arrangements to start.

My wife and I left Bridgeport on a beautiful July morning, with the air cool and bracing, our first stop being White Plains, N. Y., where we visited with friends over night. Leaving there at 9 o'clock, running to Ossinning on the Hudson, and followed the river up through Peekskill, Poughkeepsie, and Rhinebeck, then across the river

provided with three rings with oblique joints, pinned in place. All of the rings are placed in grooves above the wrist pin, and the lower end of the piston is cut with a number of oil grooves. The crank chamber is in two halves, and the upper half is provided with six supporting arms, the ends of which rest on the sub-frame.

Both the inlet and exhaust valves are mechanically operated from a single cam shaft, being located adjacent to each other at the side of the cylinders. The valves consist of cast iron heads shrunk and riveted to hardened steel stems. The heads are turned with large tapered bosses on the under side to reduce the liability of the stem breaking at the joint with the head. The openings over the valves are closed by inverted screw caps. The guides for the valve stems are pressed into holes drilled through the lower wall of the valve chamber, being held there by the press fit and by the pressure of the valve springs. The valve springs at their lower ends rest against split washers and spring cup washers. The play of the tappet rods is automatically taken up by small coiled springs which surround these rods where they extend from the guides, the springs being covered by small pressed steel thimbles. By this means the top of the tappet rods is always kept in contact with the lower end of the valve stems, and the noise of the valve mechanism is reduced to a minimum. The tappet rods are provided with adjustable caps to allow of making adjustment for wear in the mechanism. The guides of the tappet rods are clamped in position by spider shaped yokes, one for each pair of guides, which are clamped down by a single bolt each. Very interesting means are used for preventing the guides from turning. The flanges of the guides resting against the wall of the crank chamber are of such diameter that those of adjacent guides practically touch each other, and the stud which secures the yoke in place being located between these flanges, semicircular notches have to be cut in the circumference of each to allow the stud to pass, and this, of course, prevents the guides from turning. The lower ends of the tappet rods are forged and provided with cam rollers. The forks of the tappet rods are rectangular in cross section, and a snug fit in the guides, whereby the tappet rods are prevented from rotating. The cams are keyed and pinned to a hollow steel cam shaft. The cam shaft is driven direct from the crank shaft by a steel pinion keyed to the latter at its forward end and meshing with a composite bronze and fibre gear keyed to the forward end of the cam shaft. The cam gear pinion also meshes with a gear for the circulation pump. Secured to the gear of the cam shaft is an aluminum pulley from which the radiator fan is driven. The cam shaft is mounted in three bronze bushed bearings, and the two forward bushings are of such diameter that the shaft assembled with its cams and bearings can be slipped into place in the crank case from the forward end. The cam gearing is protected by a housing supported by studs screwed into the crank chamber wall.

An interesting system of lubrication has been worked out for the engine. At the bottom of the crank chamber, to one side, is formed a longitudinal oil well, which is



SECTION AND ELEVATION OF CIRCULATING PUMPS.

provided with a bull's eye at its forward end, and drains toward the rear. At the rear end of this oil well is arranged an oil pump of the gear type, which is driven by a vertical shaft receiving its motion from the rear end of the cam shaft through a pair of mitre gears. This same vertical shaft is extended upward above the crank chamber, and at its upper end carries the ignition timer. By reference to the side sectional elevation of the engine it will be seen that the driving mitre gear has a solid hub which extends through a bearing at the end of the cam shaft, and connects to

reached the foot of the mountain without a mishap.

We then proceeded to Hudson, N. Y., which is my native place, and the next morning started for home, Bridgeport, reaching there the next day at 2 p. m.

We traveled on this trip 425 miles, averaging about 12 miles per hour and about 85 miles a day. The total expense of running 425 miles was lubricating oil 25 cents and gasolene $4.50. I did not have a puncture or have to pump up my tires once. Only making one adjustment to the engine, that being to tighten the crank pin, which took about twenty minutes' time. I actually enjoyed doing that, for from what my friends, who own automobiles of other makes, had predicted by their own experience, I expected to spend several hours each day on my back looking upwards.

I have had no repairs on my car from wear or break except once when I got caught between two trolley cars and smashed one wheel and was obliged to get a new one.

The above is an account of only two of my many pleasant trips this past six months in my Model B runabout, ending December 1st, with a total mileage of 4,000 miles.

From March Ainslee's.

THE big French windows were open onto the lawn, and, dinner being over, two or three of the party who were staying for the day at the end of August with the Combe-Martins had strolled out onto the terrace to look at the sea, over which the moon, large and low, was just rising and tracing a path of pale gold from horizon to shore, while others, less lunar of inclination, had gone in search of bridge or billiards. Coffee had come round immediately after dessert, and the end of dinner, according to the delectable custom of the house, was as informal as the end of breakfast. Every one, that is to say, remained or went away, smoked, drank port, or abstained, according to his personal tastes. Thus, on this particular evening, it so happened that Harry Combe-Martin and I were very soon left alone in the dining room, because we were talking unmitigated motor-shop, and the rest of the party—small wonder—were bored with it, and had left us. The shop was home-shop, so to speak, for it was almost entirely concerned with the manifold perfections of the new four-cylinder Oldsmobile which my host, in a moment of extravagance, which he did not in the least regret, had just purchased; in which, too, he proposed to take me over to lunch at a friend's house near Hunstanton on the following day. The distance was only eighty miles, he observed, with perfectly legitimate pride; there were no police traps on the road, and so an early start would not be necessary.

"Queer things these big motors are," he said, relapsing into generalities as we rose to go. "Often I can scarcely believe that my new car is merely a machine. It seems to me to possess an independent life of its own. It is really much more like a thoroughbred, with a wonderfully fine mouth."

"And the moods of a thoroughbred?" I asked.

"No, it's got an excellent temper, I'm glad to say. It doesn't mind being checked, or even stopped, when it's going its best. Some of these big cars can't stand that. They get sulky, I assure you; it is literally true, if they are checked too often."

He paused on his way to ring the bell.

"Guy Elphinstone's car, for instance," he said; "it was a bad-tempered brute—a violent, vicious beast of a car."

"What make?" I asked.

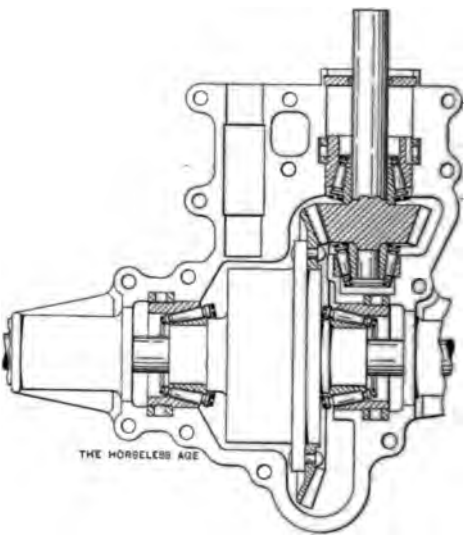
"Twenty-five horse-power, Amédée. They are a fretful strain of car; too thin, not enough weight, and weight is very good for their nerves. The brute liked running over a chicken or a rabbit, though perhaps it was less the car's ill

when its teeth engage with internal teeth on the gear wheel adjacent to it, the direct drive or high forward speed. The two sliding pinions move on four feather keys milled integral with the shaft. The lay shaft is hollow and the gears are secured to it by Woodruff keys.. The pinions and gears are cut from solid banks of high carbon steel, with teeth of "six-eight" pitch. Both shafts are mounted in bronze bushed bearings of very liberal dimensions, the rear bearing of the first motion shaft being inside the shaft to which the propeller shaft is connected by a universal joint. The reverse pinion C is normally held out of mesh with its coresponding gear on the lay shaft by a coiled spring, but is automatically shifted into mesh with it by an extension of the shifting fork controlling the pinion A, when it is desired to engage the reverse gear. The spring which disengages the reverse pinion bears against a ball thrust collar. The journal on which the reverse pinion runs is supported at both ends.

The system of operating the two gear shifting rods and locking the one not used in position is most interesting. As shown in the illustration herewith, the gear shifting lever D is the innermost of the two side levers, the outer one, E, being the emergency brake lever. The lever D is secured upon the tubular shaft F, to the inner end of which is secured a downwardly extending lever arm G. The lower end of this lever arm is adapted to engage into notches cut in the two shifting rods I and J, respectively, by shifting the lever D sideways while in its neutral or central position. The shifting rods I and J are also provided with notches on their lower side, into which notches a sliding pin H is adapted to engage. This pin is cut with a slot in its upper side, which is directly in line with the lower end of the lever arm G, so that the rod with which the lever arm G is in engagement is free to move, while the other rod is locked in position by the pin H. The motion of the pin H is controlled by the sector K secured to the tubular shaft F, which engages in a slot at the end of pin H. This sector K, which does not prevent the rotary motion of shaft F and gear shifting lever D in any manner, insures that the locking pin H is shifted sideways whenever the gear shifting lever D is shifted sideways. The locking pin H is prevented from turning by being cut with a key slot in its under side, into which extends the point of a set screw L. The brake lever E is secured upon a tubular shaft M within the tube E, to which is secured a downwardly extending arm N, from which connection is made to the hub brakes. Two spring pressed balls O are provided under the sliding rods in the gear case to help find the correct position of mesh in changing gears. The balls work in hardened bushings and engage into part-spherical recesses on the under side of the shifting rods.

The gear case is made in two halves and provided with an inspection cover with quick acting lock. The gear box is supported on the frame on the three point suspension principle, the upper half of the case being cast with three supporting arms, two of which, at the forward end, rest on the sub-frame, and the third, at the rear end, rests on a cross member of the main frame.

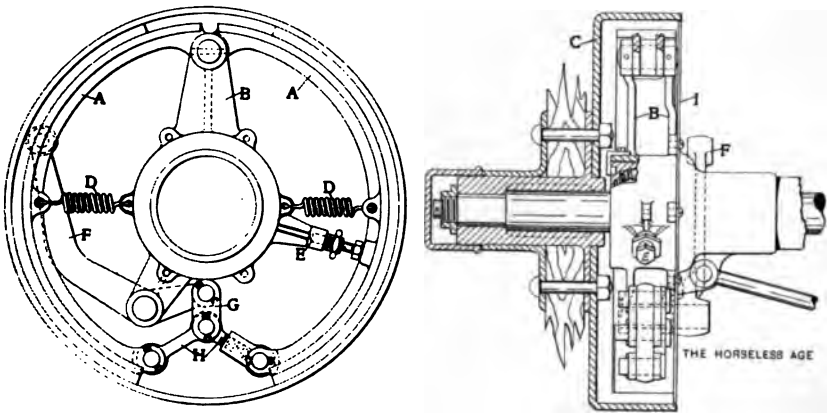
The power is transmitted to the rear axle by a shaft with a (Spicer) universal joint at both ends. The rear universal slides on a square portion of the driving shaft. The driving bevel pinion is formed integral with its shaft, which is mounted on Timken adjustable roller bearings on both sides of the pinion. The same type of bearings is used in the rear axle. The differential is of the spur gear type, and its case is formed with an external flange, to which the driven bevel gear is secured by bolts. The driving gear case is divided horizontally, and between the two halves is clamped the rear end of the torsion brace rod, which is of tubular construction and has its forward end hung from a cross member of the frame. The rear axle shafts are encased in seamless steel tubes, which are secured at their inner ends in two substantially ribbed hubs formed integral with the lower half of the driving gear case, and have se-



BEVEL DRIVING GEAR.

cured to them at their outer ends the hub brake carriers. The ends of the driving axle shafts are square, and fitted into square openings in the hubs of the driving wheels, the hubs being held in place by nuts and pins, which are covered by the usual hub caps.

The car is fitted with two independent brakes, one acting on the transmission shaft directly back of the gear box, and the other on drums bolted to the rear wheel hubs. The transmission brake, which is operated by foot pedal, is of the band type, consisting of a steel band lined with camel's hair, which can be contracted upon a pressed steel drum bolted to the universal joint by means of a bell crank and link mechanism. The brake band is supported on top by being hung from the rear supporting arm of the gear box, and is held off the drum when not applied by a coiled spring surrounding a stud set in the link of the supporting mechanism. The rear hub brakes are of the integral expanding type and operated by a toggle mechanism. The two sectors A A of the expanding member are hinged at the top to the brake carrier B on the rear axle, which provides a support on both sides of the hinge of the sectors. The sectors are normally drawn out of contact with the brake drum C by two small coiled springs D D anchored to the hub of the brake carrier B. The forward sector is drawn against an adjustable stop E extending radially from the hub of the brake carrier, which insures that both sectors are always positively drawn out of contact with the brake surface when not engaged. The brake is operated by the bent lever arm F, fulcrumed on an arm extending from the hub of the brake carrier, which connects by a link G to the toggle links H, one of which is adjustable. The brake is enclosed by a sheet metal disc I secured by screws to the brake carrier. The hand brake is interlocked with the clutch by means of a cam arrangement, which insures that the clutch is opened a certain distance and remains in that position as the brake lever is moved farther. The foot brake is not interlocked with the clutch.



OLDSMOBILE REAR HUB AND BRAKE.

The body is of the side entrance tonneau type, seating three in the tonneau, and two in the divided front seat. An interesting feature of the body is that doors are provided for the entrance to the front seat, as well as for the entrance to the tonneau. The car has a pressed steel dash and the usual equipment as regards hood and fenders.

A YOUNG CHAUFFEUR—AND HAPPY.

The How and Why of the Automobile

A SERIES OF PRACTICAL LESSONS

By Fay L. Faurote

(*Continued from January issue**)

IGNITION.

INDUCTION COIL (continued). You will remember that in our last paper in Ignition we were discussing the subject of Induction Coils, and mentioned that commercial coils, while they all worked upon the same general principle, are made up in several different shapes, the various types containing attachments which have been patented by the manufacturers.

The typical coil consists, as has been said before, of a bundle of soft iron wires around which is wound the primary wire. In order to keep this wire in place two wooden or hard rubber blocks are placed one on each end, making a spool which may be placed in a lathe for easy winding. Around this is

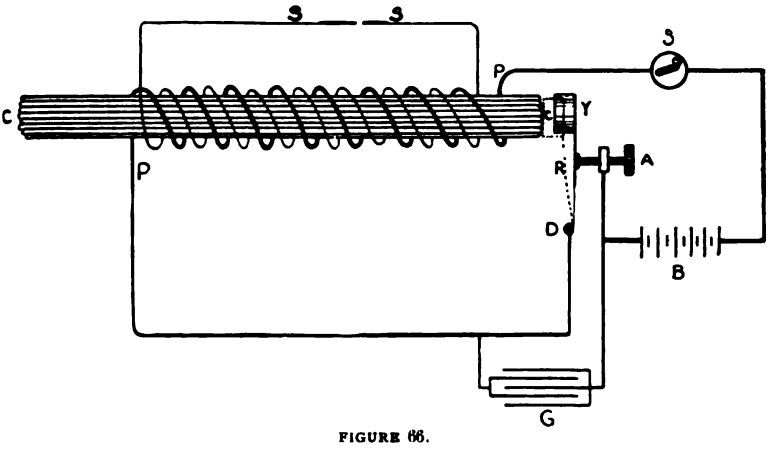


FIGURE 66.

placed a few turns of paper treated with paraffin or a rubber tube, this serving to insulate the primary from the secondary layers. Around this the secondary coil is wrapped. Sometimes, in order to make the secondary coil removable, it is made in two separate sections, each of which is wound on a separate rubber spool, and slipped on over the other winding. Thus it is a very easy

*This valuable series began in the March issue, back numbers will be sent on receipt of regular price.

matter, when a short circuit occurs, in the secondary winding, to remove the defective coil, and substitute another.

The whole coil is placed in a box or tube, and the remaining space filled in with an insulating material such as beeswax, or some similar substance. The terminals of the two windings are brought out through holes in the side of the box, and connected with the binding posts, fastened on the outside. Very often, when it is desired to connect one secondary wire and primary wire to the same binding post, this connection is made inside of the case, and very carefully protected by means of the insulating material.

The case is screwed to a base board, and connections to the vibrator are made, various forms of which may be seen in the illustrations.

In addition to this all modern, up-to-date coils are equipped with some form of condenser, indicated in Fig. 66, at "G." This condenser consists of alternate layers of tin-foil and insulating substance such as paraffin paper. Every other layer of tin-foil is connected to the wire on the right side, and the remaining layers to the wire on the left side, in such a manner that there is absolutely no connection between the two sets of sheets. The condenser acts as a storage for the electric current. The principle upon which it works can be compared with that of the action of the air dome in an hydraulic system. The effect of placing it between the contact points of the vibrator is that the spark ing is eliminated between these points, thereby decreasing

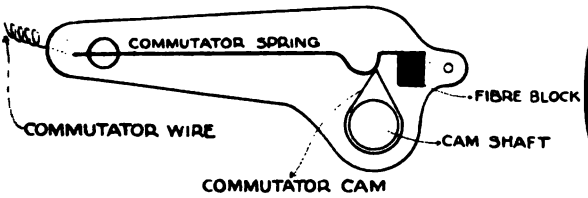


FIGURE 70.—A Single Cylinder Commutator

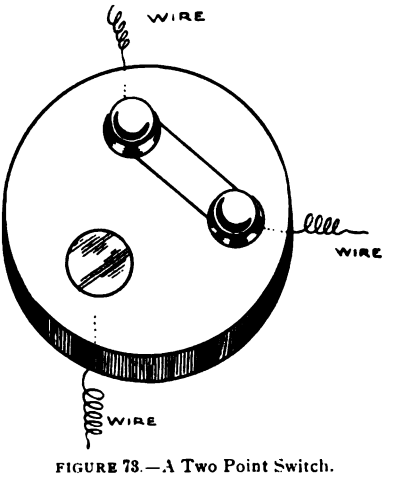


FIGURE 73.—A Two Point Switch.

the tendency to foul the contact surface. This condenser, after being made up and properly connected, is placed in the lower part of the coil box, and completely surrounded by the insulating wax used about the coil.

THE JUMP SPARK SYSTEM.—Now that we have stated the action of the induction coil, let us see how it is applied in actual practice. In a gas engine it is necessary for the charge to be ignited at regular intervals, and therefore it is the office of the electrical system to provide such a means of ignition. The current is furnished by the battery, and must be controlled automatically by a switch so that the circuit is connected at the proper time.

[illegible] switch [illegible]

[illegible] part, [illegible]

[illegible] which [illegible]

[illegible] shown [illegible]

[illegible] which [illegible]

[illegible] this con- [illegible] cam is mounted [illegible] this

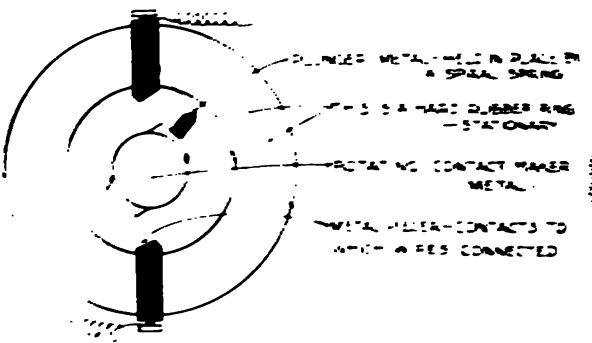


FIGURE 71.—A Two-Cylinder Commutator.

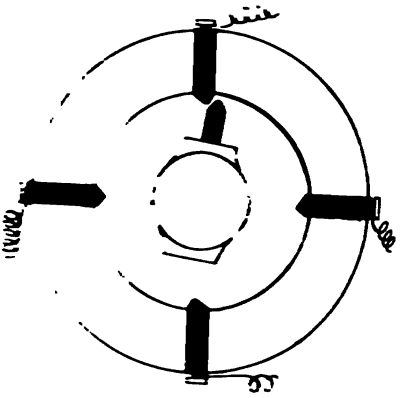


FIGURE 72.—A Four-Cylinder Commutator.

arrangement being made possible, as you will remember, by the use of either bevel or spur gearing.

In the two-stroke cycle motor, the contact is made once every revolution, and therefore the commutator may be placed upon the main shaft, itself.

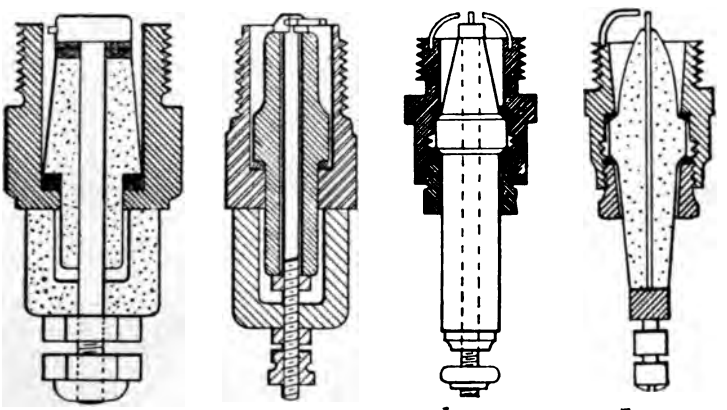
For two-cylinder motors another contact, diametrically opposite, must be arranged so that the commutator assumes a form similar to that shown in Fig. 71. For three-cylinder motor, three contacts are provided, placed 120 degrees apart. For four-cylinder, four contacts are needed, 90 degrees apart. There are various modifications of these forms upon the market, but all operate upon the same principle, and will be easily understood upon studying the mechanism carefully.

In addition to the commutator, an ordinary switch is provided, and placed in the primary circuit, at some convenient place so that the current may be turned off when the motor car is not in use. Fig. 73 shows a form of switch used. You will note that there are two points instead of one, the second being provided for an auxiliary set of batteries so that in case one set runs out, the other set may be instantly put into service. You will note in the wiring diagram shown in Fig 67 that four cells are connected to one point of the switch, and four to the other.

When the commutator effects a contact between the cam and the commu-

tator spring, the circuit is closed. The current travels from the battery through the primary winding of the coil out through the coil to the engine, through the engine and cam shaft to the commutator cam, from the commutator cam to the cam spring, from the spring through the outside wire back to the switch, and from there to the other terminal of the battery. This completes the primary circuit.

Simultaneously with the closing of the primary circuit the vibrator begins to act, and induced currents of high voltage are created in the secondary system. As this is the current used for ignition purposes, all that is necessary to do is to provide for two points inside of the cylinder between which a spark may be caused to pass. This may be done in two ways. Either by screwing into the cylinder wall a "spark plug" containing two insulated points, to which the secondary terminals may be connected, or by introducing another form of spark plug which consists of one insulated point surrounded by a threaded collar. In this case only one secondary wire is connected to the spark plug, and the other one is attached to some part of the motor. This



is the common form used as only the one wire is needed, the engine itself acting as the other conductor. The current in the secondary system will pass from the coil to the engine, through the spark plug collar across the gap into the engine to the central insulated wire, and out through the secondary "lead wire" back to the coil. Fig. 74 shows a few of the spark plugs in use at the present time. You will note that they are very similar in form, the main difference being the shape and material of the insulating tube, and sparking points.

Very often, in order to make sure that the spark occurs regularly in the combustion chamber, an auxiliary "spark gap" is introduced into the secondary circuit in such a position that it may be placed upon the dashboard in full view of the driver. This will not only show whether or not the spark is taking place, but has a tendency to make the spark somewhat larger.

If you will very carefully go over the wiring system of any car, the above explanation will soon be clear. In most cars, you will find that only one secondary wire is used, one primary and the other wire being combined in such a way that a single conductor is made to carry both currents. This wire, you will find, is always connected to the motor, and is generally called the "ground wire."

(To be continued.)

Motor Talk

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For the Country Physician

That the country physician is not looked after properly by automobile manufacturers is the contention of the Autocrat of *Brooklyn Life*, under which nom de plume a well-known and well-posted motorist writes. Then he goes on to sketch the ideal country physician's car, as follows:

Low purchase price; ample power; moderate speed; two speeds forward and a reverse (planetary gear); large buggy wheels, at least 34 inches in diameter; solid or semi-solid tires; long, flexible springs; a fuel capacity for at least 100 miles; a device for starting the motor from the buggy seat; ample storage space for cases; a top and storm apron, entirely enclosing and protecting him, and, above all, standard bolts, nuts, tires, etc., that his vehicle can be quickly repaired.

"Give the medical men of this country the opportunity to purchase such a car, and watch the results," he says. "The concern that will devote its genius and energies to such an end need have no fears for the future."

While we may not agree with the Autocrat in all these particulars, we are quite willing to admit that the country doctor and the automobile will one day be inseparable. Furthermore, it is undeniable that the motor vehicle has not become as popular with country physicians as it should have; and it is in line with this candor to acquiesce in the contention that sufficient effort has not been made, by giving them a vehicle specially constructed and peculiarly adapted to their use, to secure their patronage.

In The Wake of the Auto

The Latest Shade—When on earth I was an automobilist.

His Santanic Majesty—Ah! Then please be kind enough to crawl under that furnace and see what's the matter with the grate. It seems to be klinked up.—Scissors.

"People who haven't autos shouldn't run down those who have."

"No, but it's still worse for those who have autos to run down those who haven't."
—Cleveland Plain Dealer.

"Why do the poor persist in running down the rich?" shouted the new sociologist. "We never hear of the rich running down the poor."

"Gosh, mister,' retorted the thin man in faded trousers, "you ain't never seen an automobile, have you?"—Chicago News.

Rodney—Why do you automobile men wear goggles?

Sidney—If I tell you, you'll tell.

Rodney—Never; honor bright!

Sidney—Well, it's to hide that scared look in our eyes.—Harper's Bazar.

"Have you learned to manage your automobile?

"Perfectly," was her serene response. "I have run over two people and didn't hurt

CONFESSIONS OF AN AUTO.

Tuesday: On exhibition. Been admired by three blondes, four lawyers, one clubman and a retired sea captain

Wednesday: Sold to a man who couldn't afford to buy me. But he did. His wife is trying to get into Suburban Society.

Thursday: Gee, but I feel bad in my bearings. Also, I believe I've got wind in my carbureter Man tried me to-day. Went for ten miles and then I laid down. Sent for agent. Agent too busy to come. Having troubles of his own.

Saturday: The trouble with me was, I wasn't assembled right. I came out in a lot of 200, and they had to hurry over me. It's tough to be an invalid so young in life.

Saturday: Man took me out again to-day. Oh, my, I should hate to feel the way toward any human being he does toward me. First he was stuck on me, and now he says he's stuck with me.

Sunday: The trouble with me is that I have a dose of malaria. It gives me that tired feeling. I had to be towed home by a watering cart. Never expected to be so near a water wagon as that.

Monday: Man advertised me for sale today.

Tuesday: Guess I was mistaken about what my owner thought. By the way he praised me to a possible purchaser, he loves me better than anything on earth.

Wednesday: Sold again at half price. Man who bought me has been trying to run me ever since.

Thursday: Here I am again at factory. By Jove, they are going to take out my appendix

Friday: Operation was successful. All it took was gasoline.

Saturday: Full of ginger. Went a thirty-mile clip all day. New owner much pleased.

Sunday: Sick again. My crank-shaft has neurosis, I guess. Man changed my clutch too soon—curse him!

Monday: Traded for a horse.

Tuesday: Back at factory. These vis are getting too frequent.

Wednesday: New owner impatient.

Thursday: New owner had me out. R into a wagon of bricks.

Friday: And to think I should end 1 days in a scrap-heap!—Life.

possible narrative of what actually occurred. But it seems to me, a humble student of the occult, to be curious.

While we waited we had tea in a hotel looking onto a big, empty square of houses, and after tea we waited a very long time for our monster to pick us up. Then the telephone inquired for "the gentleman on the motor," and since Harry had strolled out to get a local evening paper with news of the last test match, I applied ear and mouth to that elusive instrument. What I heard was not encouraging: the ignition had gone very wrong indeed, and "perhaps" in an hour we should be able to start. It was then about half-past six, and we were just seventy-eight miles from Dunwich.

Harry came back soon after this, and I told him what the message from the garage had been. What he said was this:

"Then we shan't get back till long after dinner. We might just as well have camped out to see your ghost."

As I have already said, no notion of Bircham was in my mind, and I mention this as evidence that, even if it had been, Harry's remark would have implied that we were not going through Bircham.

The hour lengthened itself into an hour and a half. Then the monster, quite well again, came hooting round the corner, and we got in.

"Whack her up, Jack," said Harry to the chauffeur. "The roads will be empty. You had better light up at once."

The monster, with his eyes a-gleam, was whacked up, and never in my life have I been carried so cautiously and yet so swiftly. Jack never took a risk or the possibility of a risk, and when the road was clear and open he let the monster run as fast as it wished. Its eyes made day of the road fifty yards ahead, and the romance of the night was fairyland round us. Hares started from the roadside, and raced in front of us for a hundred yards, then just wheeled in time to avoid the earflaps of the great, triumphant brute that carried us. Moths flitted across, struck sometimes by lenses of its eyes, and the miles peeled over our shoulders. When it occurred we were going top-speed. And this was It, quite unsensational, but to us quite inexplicable, unless my midnight imaginings happened to be true.

As I have said, I was in command of the hooter and of the siren. We were flying along on a straight down-grade, as fast as ever we could go, for the engines were working, though the decline was considerable. Then, quite suddenly, I saw in front of us a thick cloud of dust, and knew instinctively and on the instant, without thought or reason, what that must mean. Evidently something going very fast—or else so large a cloud could not have been raised—was in front of us, and going in the same direction ourselves. Had it been something on the road coming to meet us, we should, of course, have seen the vehicle first, and run into the dust-cloud afterward. Had it, again, been something of low speed, a horse and dog-cart, for instance, no such dust could have been raised. But, as it was, I knew at once that there was a motor traveling swiftly just ahead of us, also that it was not going as fast as we were, or we should have run into its dust much more gradually. As it was, we went into it as into a suddenly lowered curtain.

"Slow down, and put on the brake," I shrieked to Jack. "There's something just ahead of us."

As I spoke I wrought a wild concerto on the hooter, and with my right hand groped for the siren, but did not find it. Simultaneously I heard a wild, frightened shriek, just as if I had sounded the siren myself. Jack had felt for it, too, and our hands fingered each other. Then we entered the dust-cloud.

We slowed down with extraordinary speed, and, still peering ahead, we went dead-slow through it. I had not put on my goggles after leaving King's Lynn, and the dust stung and smarted in my eyes. It was not, therefore, a belt of fog, but real road-dust. And at the moment we crept through it I felt Harry's hands on my shoulder.

"There's something just ahead," he said. "Look, don't you see the tail light?"

As a matter of fact, I did not, and still going very slow, we came out of that dust-cloud. The broad, empty road stretched in front of us; a hedge was on each side, and there was no turning either to right or left. Only, on the right, was a lodge and gates, which were closed. The lodge had no lights in any window.

Then we came to a standstill; the air was dead-calm, not a leaf in the hedgerow trees was moving, not a grain of dust was lifted from the road. But behind it still hung in the air, and stopped dead short at the closed lodge-gates. We had moved very slowly for the last hundred yards; it was difficult to suppose that it was of our own making. Then Jack spoke, with a curious crack in his voice.

"It must have been a motor, sir," he said. "But where is it?"

I had no reply to this, and from be-

hind another voice. Harry's voice, spoke. For the moment I did not recognize it, for it was strained and faltering.

"Did you open the siren?" he asked.

I tried to say "No," but could not. Simply no sound came.

Then we went on again. Soon we came to scattered lights in houses by the wayside.

"What's this place?" I asked Jack.

"Bircham, sir," said he.

Honolulu a Motoring Paradise

(From Motor Age)

Hawaii, glorious Hawaii, the land of the heart's desire! And Honolulu, its fivinity, resting like a young goddess, with her head on the bosom of towering Tantalus, and her feet bathed in the warm tropical waters of the Pacific! What a place for automobiling.

The Hawaiians take the greatest pride in their fine, smooth roads, and one may make a complete circle of the whole island of Oahu, leaving the city of Honolulu from one side and entering it on the other, traveling the whole distance within sight of the Pacific. For short trips, there is the run up Punchbowl, a small extinct volcano, just back of the city, for a hill-climbing effort, there is old Tantalus, for one of the pleasantest spins on a perfect boulevard, there is nothing like a trip to the Nuanu Pali, the latter being a pass in the range of mountains which crosses the island of Oahu. There is a perfect, gradual ascent up to this pass from Honolulu and an abrupt drop on the other side. Upon reaching this point, the whole expanse of windward Oahu bursts upon the eye, and the Pacific dazzles in the distance. The mountains separate in a triangle and the view meets the eye like the scene of a great panorama. Travelers say there is nothing to surpass it. Before the splendid road which now crosses it was graded out, and while the island was in its wild state, old King Kamehameha, who was the first to reduce all the tribes to the rule of one man, routed hostile bands by driving them up the Pali and then over the precipice which it ended. It is said the bones of his unfortunate enemies are still to be found if one would dig below the foliage which is now growing on the spot. Then there is the run to Waikiki beach, the bathing resort Honolulu, where one may refresh himself by a plunge in the Pacific, and, still in his bathing suit, mount one of the out-rigger surf boats manned by two expert Kanakas, paddle out toward the reef which makes Honolulu lay such a protected harbor, and then return at race horse speed, booming along the course of a towering wave which has broken over the reef and rears its crest above the head of the daring voyager. The canoe, held on its course by a boatman at the stern, dances along like an egg-shell, and never stops until the wave, spent at last, breaks in ripples on the beach. One may go further than Waikiki—to Diamond Head, the old volcano, which stands like a silent sentinel to the right of the harbor, and is the first land to be sighted by approaching vessels. Out to the left of the city is the Moana Loa road, which leads one finally through the sugar cane section of the island and to Pearl harbor, which the United States is contemplating dredging out and using for a great naval station for its own use as soon as it can be done.

The tourist is content for quite a while merely to travel around, admiring the beautiful palms, the labyrinth of luxurious foliage, the comfortable residences with their wide lanais, and the tropical strangeness of the scene. The people of Honolulu are well-to-do, and they are looking for entertainment; they have taken to automobiling as the best thing they have yet found. Motor cars have made a hit and are to be seen everywhere. The islanders have a way that is all their own, and some unique ideas which they have worked out for themselves. Their manner of celebrating Washington's birthday is something which might well be copied elsewhere if climatic conditions would allow. Honolulu, on that day, is completely given over to its annual floral parade. It is a feature of Hawaiian life that is looked forward to for weeks ahead and talked over in retrospect for weeks succeeding. The culmination of the celebration is now the automobile section. More time and ingenuity are lavished upon the preparation of cars for this event than such an affair gets elsewhere. All automobilists turn out in line, and all give their cars the greatest attention. The consequence is that each machine is a thing of beauty and the ensemble effect is remarkable.

One of the most successful parades in the history of the islands took place on last Washington's birthday. There were thirty decorated automobiles in line, and these were divided into three divisions. The committee having the matter in charge was liberal in its offer of prizes, and as great competition in the effort to [illegible] the prize winners. S[illegible]ersity of cars was noticeable, [illegible]es being represented.

12
Rice & Perkins

The Rights of the Automobile

By John Farson, President of the American Automobile Association

From March World Today.

IN discussing the various questions connected with the automobile and its use of the streets, the rights of the automobilist have not had a prominent place. The public seems to have lost sight of the fact that he has rights, and in some quarters he is openly treated as a trespasser. There are two sides to every question, however. Fair play and a square deal are supposed to be characteristic of the American people, and our democratic impulses are usually ready to award a hearing to both sides of every controversy. On the other hand, it is true that in the warmth with which new problems are discussed, the American public is often inclined to take a radical position. This is not through any desire or willingness to be unfair; it is purely temperamental. Nevertheless the attitude is a harmful one. Many worthy reforms are balked because they are conceived and advanced in a false light.

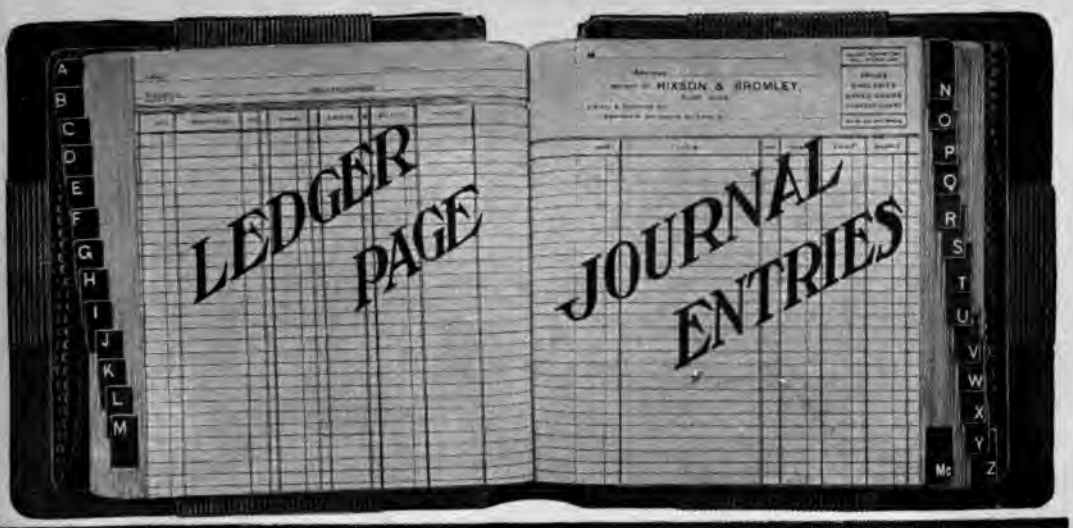
In a matter of so much importance as the protection of life and limb, at a time when there is so much ignorant, reckless and even criminal operation of automobiles upon the public streets, it is unfortunate that we are so negligent of underlying facts. If we are to suppress disorder upon the public highways we must be rational about it. It is not to be denied that there is still a very prevalent feeling against automobiles as a class and against automobiles as a means of conveyance. Blindfolded opposition of this character only throws this breach wide open and does immense harm to the cause of law and order. Such opposition as this has forced many automobilists to adopt an attitude of self-defense which, at first glance, looks very much like resistance to law. As a matter of fact, nine-tenths of the men who are to-day operating automobiles in Chicago are even more eager for the preservation of law and order on the streets than the public at large. It is regrettable that the exception must be made of the other and consciously lawless tenth.

What are the rights of an automobilist? In the first place he has the right to use the streets. This right comes to him through no statute law. The doctrine that the streets are for the public is a part of our common law and is so old that we may safely hazard a guess that it is coeval with the existence of highways themselves. The right of the public to use the streets is not dependent upon the use of any special method of locomotion, and the horse has no virtue which entitles him to assume a monopoly. In discussing this question in the

CONTINENTALS IN OLDSMOBILE.
—Courtesy Motor Age.

case of Albert C. Banker, et al., v. City of Chicago, 112 Ill. App. 94, the Illinois Appellate Court says:

> The right of appellee to use the streets is undoubted. It is true that he must use them without interfering with the safety of others in the exercise of the same right. Subject to that limitation his right can not be regulated by ordinance. The fact that an automobile [illegible] comparatively new vehicle [illegible] the question. The use of [illegible] must be ex-



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tended to meet the modern means of locomotion.

The court very wisely couples these rights with corresponding responsibilities. The man who operates an automobile is subject to exactly the same liabilities as the driver of horses. In his use of the streets he must observe and protect the rights of others. For his wanton acts he is equally liable with the man in a carriage, and the common law theory of negligence applies to him as well as to all others. The man who runs an automobile at a dangerous rate of speed, whether that speed is above or below the limit fixed by law, should be treated as a violator of law. If he is reckless of the children who are permitted to play in his path, if he toots his horn continuously or maliciously, he deserves all the condemnation that an angry populace will surely visit upon him.

The automobilist should respect the rules of the road. An observance of these rules will prevent many accidents, and yet few persons who use the streets either with horses or automobiles seem to think that there is any other rule to observe than that of keeping to the right.

The laws and ordinances limiting speed have come in for a great deal of favorable and unfavorable discussion. It may fairly be questioned whether regulations of this kind are of any value, and whether the same results can not be reached in other ways. A speed limit of ten miles per hour may be unreasonably low at some times and places. At other times and under other circumstances, a driver should be punished for reckless driving if he operates his car faster than five miles per hour. Circumstances must determine the speed a motorist may safely use. To establish a hard and fast rule that will be just for all circumstances is manifestly impossible. This is recognized in France, where a motorist is subject to no speed regulations, but is held strictly accountable for the results of his recklessness and infractions of law. In England speed is limited by act of Parliament, but so much public discussion has been provoked by the needless and unreasonable limitations imposed that it seems very probable that this law will be repealed and the French system taken up.

One of the very evident disadvantages that our speed laws carry with them is the feeling of security they give to a reckless operator in running his machine as fast as the law permits, without regard to the crowded condition of streets or other circumstances which may make it dangerous to travel more than two or three miles per hour.

Notwithstanding the partial failure of speed regulations to meet conditions as they are, there is nothing really unfair about them, unless it be in the unreasonableness of the limit fixed. Speed laws are serious, conscientious efforts to mitigate the evil of fast and reckless driving. Law can not always be perfectly adapted to the evils they attempt to prevent and

AUTOMOBILING IN ANCIENT GREECE.

punish, and a law which reasonably accomplishes a laudable purpose should not only be obeyed but respected. An automobilist courts no sympathy for himself in opposing these laws or in declaring his purpose to violate them as often as he can do so. The expressions of such men are doing much to hurt the cause of the automobilist. Speed laws are makshifts, however, and what we most need is a rigid determination and ability to visit punishment upon all those who are responsible in any measure for the evils that undeniably exist to-day through the use of automobiles.

The continued increase in the use of automobiles for many years past has now established firmly the proposition that the automobile has come to stay. It is a new method of locomotion, but it is destined to become the reigning method and it behooves us to c
the relation of the auto
public streets. The im
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merce. The movement for law and order will find ardent supporters among the ranks of the automobilists. The automobile clubs of the country are now exerting a tremendous effort in this direction.

View Points

From Town Topics.

The incident—A huge touring car—bright red and carrying a staring-eyed chauffeur and a pretty girl—dashed down the long, straight avenue.

A young woman of a certain pale loveliness that could never pass unnoticed left the sidewalk and started to cross the roadway. Straight forward, with a glance neither to the right nor the left, she hurried until, with a faint cry, she dropped to the ground just as the whizzing wheels lashed the dust into a cloud about her.

A policeman gave three sharp notes on his whistle. A bystander, his eyes wide with horror, dashed across the street and leaned over the prostrate form. The young woman stirred, opened her eyes, and rose to her feet.

"Thank you; I'm quite uninjured," she said and turned away.

THE BYSTANDER—" By George, I saw a crazy thing this afternoon, Tom. A mighty pretty young woman tried to cross Fairmount avenue when there was a big red devil of an automobile coming down the road. By Jove, it was an outrage, Tom, an outrage! The thing bore down upon her like a relentless fiend. There seemed no escape, positively no escape. It's a marvel that every bone in her body wasn't crushed into jelly. And she came out of it unscathed—absolutely unscathed!

"Imagine my amazement, when I hurried to pick up what I supposed would be a lifeless corpse, to have that same corpse get to its feet and walk off! And I? I stood like a ninny looking after it."

THE POLICEMAN—"The car was numbered 8714, sir. It was at the junction of Piedmont street and Fairmont avenue when I spotted it, and it was running way beyond the speed limit. I gave the signal, and Dolan held them up a block below."

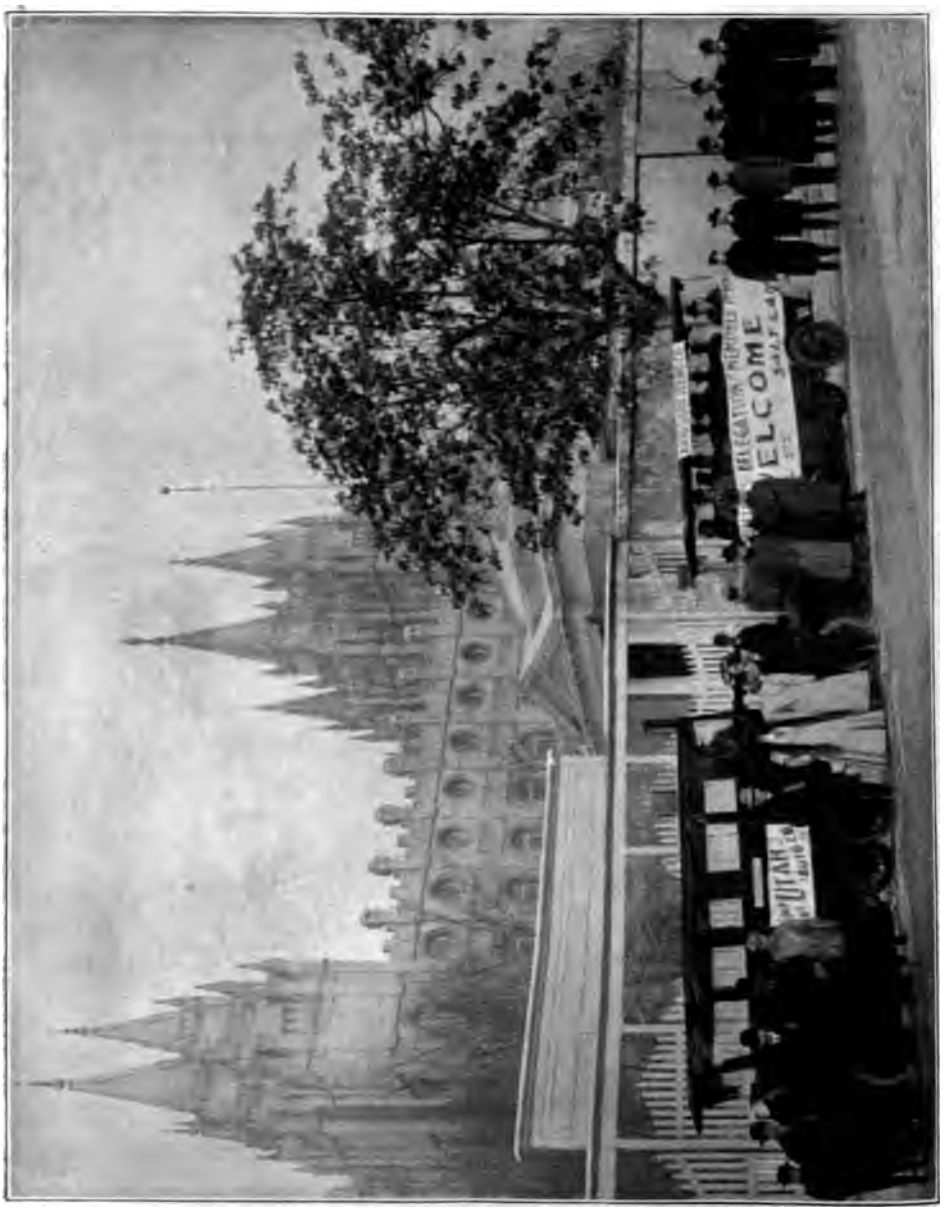
THE PRETTY GIRL—"Why, mama, it was horrid—perfectly horrid! Only think of it—arrested—me! And poor Wilkins—he

AN OLDSMOBILE STANDARD RUNABOUT ARTISTICALLY DECORATED.

wasn't going fast at all. Just as if I should allow my chauffeur to do that!

"It would have been all right, mamma, and nothing would ever have come of it if it hadn't been for a stupid little dowdy woman who tried to cross the road right in front of us. Silly! I could have shaken her! Of course someone saw us then, and we were stopped by that horrid policeman.

"Was she hurt? How should I know? We went by so quick I couldn't see; and after that man stopped us—humph! I was so indignant! As for Wilkins, he was so queer I was half afraid of him. Actually,



OLDSMOBILE PASSENGER COACHES OPERATED BY THE AUTO SIGHTSEEING CO., SALT LAKE CITY, UTAH.

I don't know but the thing turned his mind."

THE CHAUFFEUR *(to himself)*—"How slow we go; we seem to crawl. I'll let her out—out—out! There—now it's something like! Ah, the wind—the wind!—it thinks to conquer me. It beats my face and stings my eyes to tears. Conquer me—*me?* Why, a twist of my hand so—and so— and so—ah, now we're moving! Ah, ha, Sir Wind, and so you fight the harder, eh? I'll show you! There, take that, will you?—and that —and that! I'll beat you yet, you puny thing! Look at the houses; look at the trees; see them fly at my approach!

"What's that—that black thing straight in my path? A woman? Does a thing of skirts and feeble strength like that think to stop my course? No—a thousand times no! On, straight on—not one inch will I swerve! Ah, ha, she's down—down beneath my feet; and I have won—won!"

THE YOUNG WOMAN *(writes)*—"To you, my little book, I will tell the truth. I meant to do that thing today. I meant to have those wheels crush out my miserable life. I thought it fitting and proper that her pleasure carriage should destroy the existence her beauty had already made of no value. I pictured *him* when he should see my poor, dead body crushed into nothingness by the woman who had stolen his love from me; but, as the picture grew in my vision I suddenly saw the scorn in his eyes and the sneer on his lips that he had ever loved so weak a thing as I had proved myself to be—and 'twas then that the wheels were almost upon me! How I dropped to the ground and slipped from the track of the monster, I do not know—but I did it; and the ugly rubber tires only ground my skirt into dust.

"And now I can walk and talk and laugh; and oh, little book, how good just living seems!"

Government Road Building

The government of the United States has built highways in Cuba, in Porto Rico and the Philippine Islands, and Congress is even now preparing to appropriate money to blaze the highways and establish means of communication in Alaska. But the astonishing fact remains that the government has taken no substantial part in building highways at home, and helping the people who sustain it, and furnish it the very sinews of existence as a government, although it is not forbidden by constitutional limitation or sound public policy from engaging in such internal improvement. Intelligent men all over the country know that the almost uiversal lack of improvement in our road conditions is directly referable to the fact that there has been no established system or policy pertaining to the question. According to the ordinary schemes for road building the farmers have been compelled to pay the burden of the cost. Road building is undoubtedly a duty of government. Government is established for the welfare of the people. Nothing that can be evolved from the brain of man will more directly effect material interests among the people than road conditions, for good or bad as the roads are good or bad. The question is one coming home to all the people. The proposition embodied in the Brownlow Good Roads bill is undoubtedly a wise and thoroughly patriotic one. Congress is being looked to for relief in this road matter. The people are now aroused as they have never been in favor of this suggested system of co-operation, aided, fostered and led by the general government. The money that has been expended in the Philippine Islands—money gathered as taxes from our own people—would have constructed a scientific system of roads in every State in the Union. The people are studying about the question of government levying tribute on them for the support and betterment of other peoples, while relief is denied to them at home. The subject is assuming the practical phase that will lead to legislation such as the Brownlow-Latimer bill, or something similar thereto.

The annual Denver Automobile Show, sanctioned by the N. A. A. M. and M. & A. M., will be held in Denver, Col., in the Coliseum Hall, April 18 to 21 inclusive, under the management of O. A. Wahlgreen, publisher of "Motor Field."

Several of the Western Manufacturers have applied for space, and a good representation of western products is expected, as well as the prominent makes from the East. A large attendance is expected of dealers and automobile enthusiasts from all parts of Colorado and adjoining states.

An action for damages alleged to have been received in an automobile accident was recently brought in an adjoining county, tells the Utica Observer. A woman had been thrown from a carriage, the horse attached to which was frightened by an automobile. She landed in a ditch and was not dangerously injured. Upon being assisted to her feet, it is related, some one spoke of calling a doctor, and suggested a physician who visits his patients in an automobile. The injured woman protested, saying: "No, don't call him; I don't want an automobile doctor. Get a horse doctor."

The Autoists' Reading Table

Books Received

THE 12TH ANNUAL REPORT OF THE COMMISSIONER OF PUBLIC ROADS.—Copies of this report, which is of unusual value to all interested in good roads, can be obtained from the Commissioner of Public Roads, Trenton, N. J. When it is considered that the roads of New Jersey rank among the best in the Union, the particular value of the report can be better appreciated.

SCIENTIFIC AMERICAN AUTOMOBILE NUMBER. (New York, 361 Broadway). This annual edition appeared Jan. 13, and was up to the usual high standard of that publication, which is recognized as a leading authority on all technical matters.

MY FRIEND THE CHAUFFEUR, (New York. McClure, Phillips & Co., Price $1.50.) Frank A. Munsey in a recent article on "What the Automobile has Done for France," made the following statement: "As an initiatory advertisement, the Lightning Conductor, which everyone seems to have read, is worth to France a million dollars, perhaps ten times as much." C. N. and A. M. Williamson, the joint authors of "The Lightning Conductor" have again brought out a delightful automobile story under the foregoing title. It is an automobile romance, full of the joys and delights of motoring. It has well been said that from the start in the Reviera to the finish among the mountains of Montegro, there is no let-up in the entertainment and excitement which this book affords. The volume should be on the table of every automobile enthusiast.

MOTORS AND MOTORING. (New York. Dodd, Mead & Co. Price 50 cents, Postage 8 cents.) Henry J. Spooner has packed into the 99 pages of this little volume a fund of interesting and instructive information invaluable to the motorist.

"Why I stand by this little book and am passing it around to my friends who have motor cars or the motor car fever," says an enthusiast, "is because it is the first and only book on the subject that I have been able to find that seems designed to benefit the owner instead of the repair shop. There are other books about automobiles and I have read them—that is at least, I have tried to. They may be all right for the man who makes the automobile his business, but the only effect they may have me is to muddle me so with their t alities as to leave me with the pr conviction that it was useless to understood and that the only thing send my car along to swell the pr the professional. Motors and Motori me what I want to know in Englis can comprehend. That's why I stand To anyone who has had the slightest ience with the automobile and its ture not a word more need be said.

First Automobi in St. Louis

From Auto Review.

To Samuel J. Keifler, one of the salesmen of the Mississippi Valley mobile Co., belongs the credit of owned and used, five years ago, t

Oldsmobile in St. Louis, Mo. Mr. then represented the Allan-Keifler C Co. of that city. The machine is use. It is 4-horse power and capabl ing driven at the rate of 25 miles a During Mr. Kiefler's use of the in making his daily visits to his cu he averaged 25 miles a day, and all covered a total of 12,000 miles, pri over the streets of the city.

Speaking of the automobile an free delivery as factors in the goo movement brings to light the fact ready the attention of the rural f livery carrier has been turned to demonstrated that the standard aut runabout is the machine best ada this class of work, and a number are already in commission in vario of the country.

AUTOMOBILING IN RUSSIA—A MID-WINTER SCENE.

Motor Talk

A Magazine of Out Door Sports

PUBLISHED AT

DETROIT, MICH., U. S. A.

Subscription price fifty cents the year, five cents the copy. Advertising rates sent on application, Address all communications to MOTOR TALK, Detroit, Mich.

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Automobile Doings

From World's Work

The automobile may regard itself as the most fortuate of all recent inventions; for society has adopted it as a fad; rich men squander fortunes on it; the common duties of everyday life demand it; its "shows" are fashionable and profitable; its manufacturers flourish; and all the forces from fashion to utility have united to hasten its development. More ingenuity is probably applied to its improvement than to the perfection of any other mechanism; and every year the advance toward economy and practical utility is noteworthy. Luxury and speed have, of course, had undue attention because of the patronage of the rich; but cheapness, strength, safety, and all the other qualities that go to make motor-cars good for the everyday uses of life—by persons of moderate means for pleasure and for all sorts of work—are not forgotten. It is estimated that 100,000 machines are now in the United States.

We are already within sight of the time when these machines will do much work of the sort hitherto done by horses and trolley cars. Yet the horse holds his own; the trolley car broadens its area, and travel by steam railroads continually increases. Man's capacity for getting about surely was not suspected till this generation. A new product of manufacture, a new subject of conversation, an aid to social life, a new luxury, an instigation to good roadbuilding, a new sport, a prod to the study of mechanics and of scenery—from the point of view of industry, or of education, or of social life, or of contemporaneous literature, what an astonishing part it plays—to say nothing of the running of two miles in a minute.

Interesting Figures

Interesting figures relative to the extent of the automobile industry in Michigan are given in statistics gathered by the Michigan State Labor Bureau. They show that from a humble beginning in 1899 the business has now grown until it is one of the principal industries of the state, with an annual production valued at over $18,000,000.

It is also shown that the automobile has not been exploited to any extent for commercial purposes, but is still used mainly as a pleasure vehicle. Last year 13,702 automobiles were manufactured in the state and of that number 96 per cent were pleasure vehicles. The value of those constructed was $18,061,900.

There are 34 automobile factories in Michigan, 18 of which are in the city of Detroit. The total cost of the factories is estimated at $2,284,800, and a feature of the industry is that a large amount of "accessory stock" is required, thus furnishing employment for a great many more than those employed in the automobile factories. At least 59 per cent of that stock is manufactured in the state, including springs, wheels, axles, tires, etc.

The automobile manufacturing business began to boom in Michigan in 1902, when seven new factories started business. The next year eleven more were started and the following year eight more. Last year five new factories were established. The average cost of the plants was $67,200; two plants in the state cost over $400,000 each.

Mostly skilled labor is required in the factories, 2,782 skilled laborers being employed as against 709 common laborers. Ten of the plants have increased their capitalization since organization, 28 reported that the outlook is good, while one reported it as fair, one as poor and one reported that it was going out of business.

In Motor-Land

The moral difference between autograph and auto-graft is that the one is long hand and the other is underhand.

An automobilist who was touring through the country saw, walking ahead of him, a man followed by a dog. As the machine drew near them the dog started suddenly to cross the road; he was hit by the car and killed immediately. The motorist stopped his machine and approached the man. "I'm very sorry, my man, that this has happened," he said. "Will five dollars fix it?"

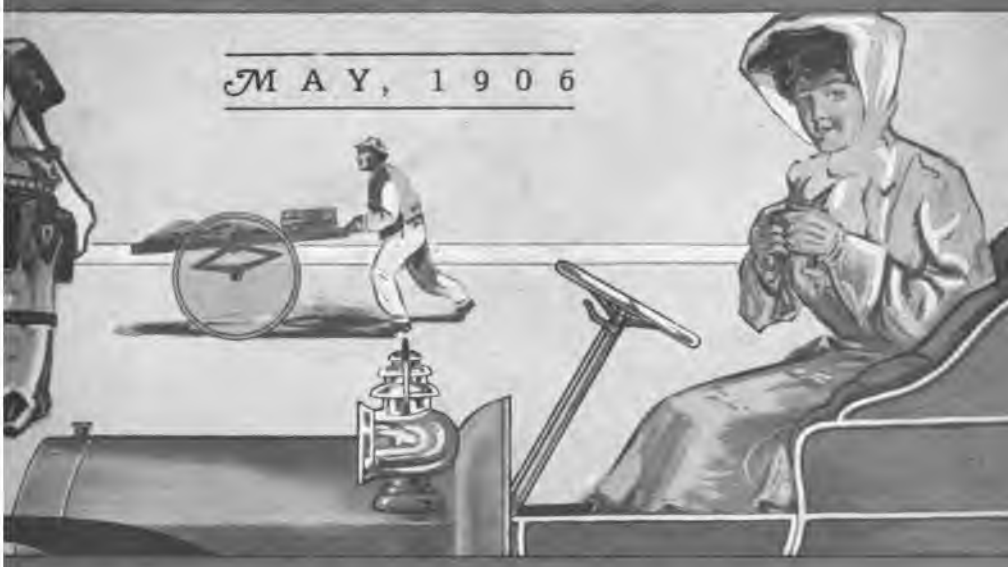
"Oh, yes," said the man; "five dollars will fix it, I guess."

Pocketing the money as the car disappeared in the distance he looked down at the dead animal. "I wonder whose dog it was?" he said.

MOTOR TALK

MAGAZINE OF OUTDOOR SPORT

MAY, 1906



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Northern Mfg. Co., Detroit, Mich.
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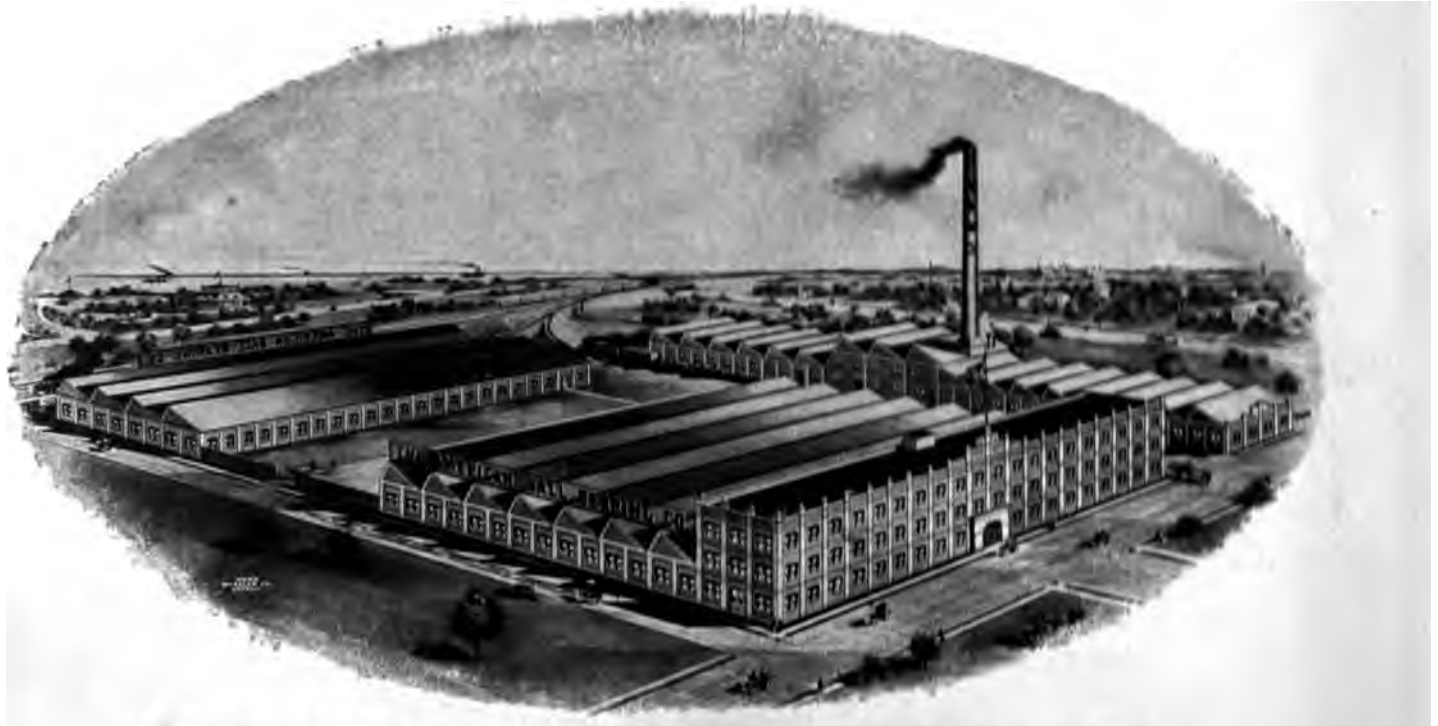

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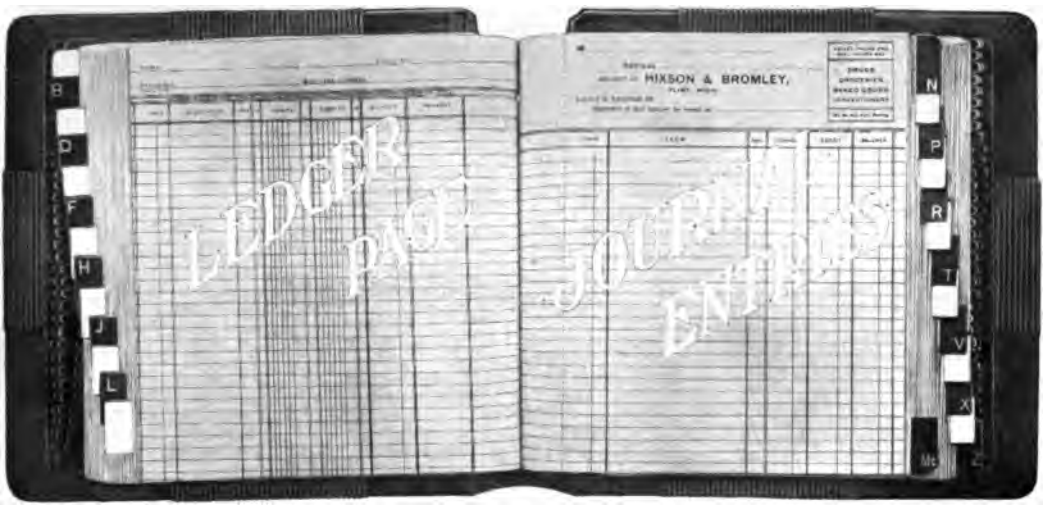

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WINNER OF THE 200 HOUR NON-STOP RUN WHICH ENDED IN DETROIT, THURSDAY, APRIL 26. THE DRIVER IS DWIGHT B. HUSS, WINNER OF THE OLDSMOBILE TRANS-CONTINENTAL RACE, WITH HIM ARE MESSRS. J. F. SCHNEIDER, SCOFIELD AND WRIGHT.

Motor Talk

A Magazine of Out Door Sports

VOL. II. MAY, 1906 No. 5

Solving the Good Roads Problem

By Thomas H. Macdonald, Who Writes From Intimate Acquaintance With the Subject of Good Roads

From Suburban Life.

FROM an economical standpoint, the subject of improved highways is one of the important problems in every state. The country roads must, for a long time, be a link in the chain of the ways affording transportation and distribution of all articles of exchange from producer to consumer, whether it be the raw or the finished product; but there are other phases of the question fully as important and which have, perhaps, not been accorded their true value

Although the subject of roads is world-wide, the roads themselves affect communities locally. They are not the interstate channels of trade, and the effect of improved road conditions upon one locality would be largely the same in another community, and it is this second effect that seems so all-important in considering the roads as among the conveniences of and inducements to the better living of communities.

Electric interurban and suburban lines are often run through the same territory closely parallel to steam lines, and do a profitable business without, oftentimes, seriously affecting the business of the latter because they develop a passenger traffic of their own. In the same way, improved roads tend to develop and promote, in a healthy manner, the growth of social intercourse in the community and locality through which they run, tending to the advancement of that community along all lines; and that community which first begins road improvement in a systematic and permanent manner gains just that much over one more backward.

As one writer has said, "A people may be judged by three things: The care which they give the burial places of their dead; the position which the women hold in their regard, and the advancement which they make in improving the facilities of intercourse." The development of our railways, electric and steam, has been so magnificent that we have lost sight of the true importance of the country roads, and it is only within the past few years that the attention of the people has been again turned to the building and improving of their highways since the construction of the first great national pike.

The task seems herculean when we consider the thousands of miles of public roads existing in every state. Iowa alone has about one hundred thousand miles of such roads, of which not more than two per cent have as yet hard surfaces of any material such as gravel or broken stone. This is an extreme condition, as a number of eastern states have made for a number years liberal

appropriations to improve their important roads, and some of the finest roads now built are found in Massachusetts, New York and New Jersey. Heretofore in states where no general supervision by Highway Commissions exists, road improvement has been slow and erratic, due rather to lack of trained men than to lack of money facilities. Sufficient taxes are collected either in money or labor for roads and bridges to accomplish considerably more than has been done in the past; it is a purpose of this paper to point out a general course of action along which road improvement should be begun.

Running out from our trade centers in all directions, the highways branch and divide at section corners and convenient points, into other roads, so that the whole country is covered as if by a giant net of roads, with the meshes a half mile or a mile square. A very large proportion of these roads will have no top dressing except the common soil which happens to be prevalent in that locality. In the Mississippi Valley states and others which have found that these roads are always unreliable, and for a few months each year, almost, if not quite, impassable, the "split-log drag" method advocated by D. Ward King, of Maitland, Missouri, has been received with ever-increasing favor.

The movement was started in Iowa, when the Northwestern Railroad sent a special car, carrying Mr. King and others interested in the roads from the Missouri River on our western border across the state to the Mississippi River, to advocate the use of this simple contrivance for the maintenance of the earth roads. Later in the year, the Burlington Railroad inaugurated a similar campaign in the southern part of the state. In February, 1906, the Chicago and Alton Railroad ran a similar car over its line from Chicago through Illinois and Missouri, and at the present time the Santa Fe System is conducting a campaign for better roads in Kansas in the same manner.

This short outline of the wonderful interest the Missouri "split-log drag" has awakened is sufficient warrant of its merit. The directions for its use are very simple. After each rain or wet spell, when the road is beginning to dry, the drag is hauled up one wheel-track and down the other at an angle of about forty-five degrees, which tends to move a little earth toward the middle of the road, and at the same time fills all the ruts and hollows. By the continued use of the drag at the proper time,

THERE ARE FEW STATES THAT ARE NOT OBLIGED TO CONFESS THE EXISTANCE OF ROADS LIKE THIS IN THE SPRING OF THE YEAR

A SAMPLE OF GOOD ROADS IN NEBRASKA.

the results secured are astonishing, when the simplicity and even rudeness of the implement is considered, and the cost is very low. Such a drag can be made for seventy-five cents to two dollars and a half, and will last a long time. The number of times that the road will have to be dragged during the year will vary according to the traffic and the rainfall, but perhaps an average of once a month will be all that is necessary for most of the country roads throughout the year.

To assert arbitrarily that good results can be obtained by this method of caring for the roads would scarcely be convincing We should consider, however, that where we have our worst conditions, and where the roads are hardest to maintain, in regions of clay or gumbo soils, the continued action of the water, the wheels of traffic, and the horses' hoofs have so mixed and worked the soil in the traveled portions of the road that it can be molded into cup-shaped forms that will hold water. Each time the drag is used after a rain, when this material is still damp, a thin layer is spread over the surface of the road and packed down by the rolling actions of the wheels and pounding of horses' hoofs, forming an almost water-proof layer. Little by little, the crown of the road is built up of successive layers, until a covering of considerable thickness is obtained which is not easily affected by water or frost. The hardening of the road continues for several years, and a faithful use of the drag over such soils as have been described will produce almost wonderful results. The roads will not become impassable at certain seasons of the year, as they do now.

The question of road improvement, however, must not stop with the use of the drag alone, but, to get more systematic results, the road officers of each county should have road-maps prepared showing the main highways through their counties and also the secondary roads. These maps should be distributed to the town or township officers who would work in co-operation with the county officers to improve first of all the main traveled highways. In our rural districts this will constitute from twenty-five to thirty-three per cent of the whole mileage, increasing from that up to perhaps fifty or sixty per cent in more thickly settled communities. The amount of money raised each year will be sufficient in most cases to build in each township a few miles of roads with gravel or macadam surface.

As has been said, in the East the building of permanent roads has of late years progressed at an increasing rate; and while there still exists some sentiment in such states as Iowa and Illinois against anything of the kind, a start has already been made, and the people are coming to realize that a certain per cent of the highways of any community must be so improved that they will be absolutely reliable the year round.

Perhaps, however, one of the most important suggestions is concerning the building of more premanent culverts and bridges. Our country roads and the road superintendents have long been the objects of our wrath, while the streams and waterways have been the real scapegoats of the road

SOME STATES HAVE ROADS LIKE THESE.

situation. It is into the building of bridges and culverts that a very large proportion of the money raised for the roads proper has been diverted, and the results obtained are anything but satisfactory.

As it becomes necessary, the road officers should replace the old wooden or pipe culverts with culverts of concrete or concrete reinforced with steel. The cost of this kind of construction is not excessive if properly handled, and the Iowa State Highway Commission has received a number of reports from counties that they are well satisfied with the structures they have built during the past year. These counties, however, took up the matter in a business-like way, hired a competent man, bought their cement by the car-load and conducted the work economically and well. One or two of these counties are even planning to buy a concrete-mixing machine for the next year's work, and one county bridge superintendent is already figuring on a car-load of reinforcing bars, for use in future work in his section of the state.

The policy which has been pursued by many counties in letting all the bridge work out at a specified sum per lineal foot is just as ridiculous as prescribing the same kind of medicine for every kind of disease, and is equally disastrous. The kind of construction, particularly of foundations, that is needed in one place would fail completely in other localities, and the proposition comes back to the need of the competent man as superintendent of construction for different counties. The experience of Lee county, Iowa, during the past two years has sufficiently illustrated the value of having a county engineer to take charge of such construction, and it is

A "FAIR LOAD."
—*Kindness A. B. Elwell, Lockport, N.Y.*

a matter of record that in one case alone the engineer of this county saved his year's salary on one contract of cement.

Sand and gravel and stone are widely distributed through the county, and there are men everywhere who understand the use of concrete and stone; but only by a proper combination of all these will the rural districts free themselves from the yearly loss, due to the poor materials, poor workmanship and incompetent superintendents, that has been characteristic of many states.

AUTOMOBILING IN LOUISIANA. MR. ABBOTT, OF NEW ORLEANS, AND HIS OLDSMOBILE PALACE TOURING CAR.

The Good Roads Problem

And the Benefits to Autoists, as Told by W. P. Brownlow, Member of Congress from Tennessee

From Illustrated Outdoor News.

ALMOST one hundred years ago the Federal Government began to look into the methods of communcation and the necessity of opening up avenues of trade, the pioneer objects being the Chesapeake and Ohio Canal, and the national road from Cumberland to the Ohio River. After considerable money was spent on these undertakings the policy was abandoned. Later on public attention was given to building railroads; and so it happened that the vast importance of wagon roads was almost entirely forgotten until the introduction in Congress of the "Good Roads Bill." Following this came such a revival of interest in the public highway question that two similar bills were introduced in the Senate, one by Senator Gallinger, of New Hampshire, and one by Senator Latimer, of South Carolina, and another in the House by Representative Currier, of New Hampshire. The offering of the bill thus set in motion public sentiment, and the result has been a constantly growing agitation of the subject in all directions.

Good roads associations have been organized in many states, and the people have been given object lessons and practical demonstrations of great and lasting value. In some States the legislatures have taken the road question in hand and liberal highway appropriations have been made. This has come about as a natural sequence of necessity. The conviction forced itself that, while good roads are costly to make and keep in repair, yet bad roads cost more than good ones. When the cost of good roads was compared with the cost of hauling or traveling over the ordinary mud roads it was found to be light by contrast. This is one of the many splendid lessons developed in plain figures by the Good Roads Office in the Department of Agriculture at Washington

Along the line of national aid to good ads, it may be said that as the States of Union have multiplied from the original teen States, all of which were sea-coast ates and inland territory has been ded into commonwealths, not all of which are directly concerned in river and harbor improvement, there has grown, and is constantly growing, a demand for a division of benefits, for the burden of taxation falls as much on the inland States as on those with rivers and harbors to improve. This has been termed the "equitable division theory," and is justified under the powers in the Constitution to provide for the common defense, to establish post roads etc., but the real strength of the contention was in the fact that the inland States were entitled to local benefits as well as the sea-coast States. While this view was fixed firmly in the minds of the people, the inland States have never asked that the Government should assume all the cost of highway construction, as the people of the sea-coast States have exacted with reference to harbor improvement. The States are willing to meet the general Government on the half-way ground which the Brownlow and other bills propose, while the river and harbor people, who get the direct benefits expect to pay for no part of their improvement.

This question of roads is the most important one the country has to deal with at this time. It is country-wide in its bearings, and demands the best thought of the nation. The civilized governments of the Old World have connected their communities and trade marts by well-constructed roads, those countries recognizing road building as a government function. If the United States ever reaches the highest development, it will be through like policy in road building, because no country can attain the best under universal bad road conditions. The making of roads capable of resisting all the climatic changes to which this country is subject—frost, heat, etc.—will require the expenditure of a vast deal of money, more than rural taxpayers can properly be expected to make.

It is difficult, perhaps, to settle upon a satisfactory division of the cost of constructing roads, still that problem will be easier of solution than it is to see how general road building can be perfected without the national Government leads the way. While every w[illegible] of the foregoing is true and not susce[illegible] erious con-

troversy, it is equally true that the States can of themselves do a great deal to work the needed revolution; can of themselves do a great deal in the way of improving the highways, and thus hasten the day when the question of federal participation will be lifted out of the field of speculation into that of practical government. Some of the States have already expended large sums of money in improving their roads. New York, New Jersey, Connecticut and Massachusetts are the more notable instances. North Carolina, Ohio and one or two other States have taken steps in like direction, and still other States should follow. When the States have generally adopted advanced road-building policies, the way to national aid will be easy, because every mile of good roads constructed is a herald of other miles of good roads to follow, and public sentiment will more rapidly focus on the importance of the general Government joining in the cost of the improvement.

The Governor of Tennessee last year called a convention to meet at Chattanooga in that State to consider the question controlling yellow fever. That convention was held and the question thoroughly discussed, being attended by the Governors of Southern and Northern States and many others. Up to last year the obligation of quarantine restrictions devolved upon the State authorities, but of necessity a greater than local power had to be invoked, and we see as a result that the national Congress has taken the matter in hand. Here we have an emphatic acknowledgment of the right of federal control in what has been heretofore held to be purely a matter for State control and management. It is the march of events and a broader conception of government function and government obligation. It shows progress and advancement in the field of national intelligence. It is a great step forward in the affairs of the partnership of States—a new ratification of the compact of the Union.

The point the writer would make is not that the road question and the question of quarantine regulation are parallel, but that out of the effort of a few States comes concerted action in the national legislation on a proposition of general public concern; and the deduction then becomes fair that if the States will adopt up-to-date road policies and inaugurate systematic road construction within the limit of their ability so to do, the national thought will respond to the necessities of the hour, and government aid will then be extended to accomplish what the States unaided will find themselves unable to do. The highways are the common property of the people, and in every State there should be put in motion the machinery of local government for their improvement. The national government will be brought to the aid of the States in this matter, when the States have started to help themselves.

J. P. SCHNEIDER, OF DETROIT, AND HIS OLDSMOBILE MODEL S.

The Motor Car in Business

Evidence of the Development of the Automobile Among Practical Lines

[illegible] commercial [illegible] Detroit [illegible] the [illegible] Supplee [illegible] White [illegible] Supplee wagon [illegible] capacity [illegible] The [illegible] Olds Motor Works [illegible] Mich.

The mileage [illegible] average [illegible] that each [illegible] the wagon [illegible] [illegible] [illegible] [illegible] the service [illegible]

Many improvements have recently been effected by the manufacturer [illegible] the vehicle, a number of [illegible] the use of pneumatic tires which were originally [illegible] [illegible] the service [illegible] [illegible] [illegible] [illegible]

red. The car is of 18 horse power can make the trip in 18 minutes, as it took the old horse carts an

The contract requires that the be made in 22 minutes. Seven day are to be made and already manufacturers in the Milwaukee on district are blessing the auto mail e. The postal authorities at Wash- are closely watching the Detroit ex- ent and upon the success of auto mail here depends the question of whether or not similar service will be inaugurated at other big postoffices throughout the country.

The Auto Express Co. is assisting Mr. Baldwin in carrying out the contract and during the two weeks that the service has been in operation there has not been a breakdown or delay of any kind. The Olds Motor Works feels honored that the government should have selected one of its cars for the test.

Some Elemental Facts About Motoring

Four Brief Chapters in Regard to the Selection, Care and Operation of an Automobile

By [illegible]

[illegible]

THE selection of a motor-car, like the choice of a wife, is something to be undertaken with circumspection and forethought. A man ought to realize the attitude which is allowed him in its selection until he goes into the market, and then he stands in a fair way to be overwhelmed by the mass of information showered upon him, and evidenced by the multiplicity of machine and claims of superiority put forth by car makers. He should be known as an owner of the fact that no manufacturer can possibly have assembled all the valuable features in any one machine. Even then a few pitfalls will have to be avoided. Some knowledge which your judgment will be useful to you. Moreover, it is useless to undertake to learn all the technical terms used to describe the different types. You can only determine how much a man knows about an automobile by the manner in which he uses it.

The first thing he should get a machine adapted to the needs of the purchaser is a man of moderate means and a small family, he should get a runabout, unless he deliberately plans to furnish a conveyance for all his friends and neighbors. If he is a married man, he may [illegible] Buy machine with a view to the purpose for which it is to be used, but also to the largest annual mileage, and also to the unmeasured expense of operation.

Second place, the machine [illegible] with respect to the purpose for which it is to be devoted. If a pleasure-car is wanted, to be used on long cross-country tours, the car must be one which will travel equally well over country roads of Maine and through the tropical vegetation of Mexico. It should be as light as is consistent with durability and efficient service, not too complicated, and easily handled.

If the new machine is to be devoted to such heavy work as transporting guests to and from the railroad station and for other strictly utilitarian purposes, it will need to be particularly strong in construction, with stout springs and heavy tires. There is no ordinary kind of service so hard upon a motor-car as these short, recurrent trips.

The matter of speed is a question which the owner must settle for himself. The average American apparently wants to use even his pleasures at whirlwind speed, and the motor-car manufacturers have not been slow to accommodate him in that respect.

When a man goes to buy a machine, it is the part of wisdom to take along a friend who has operated a car for a year or two and knows something about mechanical conditions in general.

It is a good plan to buy from a local dealer if he is a reliable man, for then it will be easier to have repairs made and secure new parts without delay.

Perhaps it is useless to say [illegible] should never be paid for [illegible] given a practical test on [illegible] strange that that two [illegible] rently identical in every [illegible] te different actual

service. Be certain that the control of the mechanism is instantaneous,—that the engine responds properly to the movements of the lever, that the brakes act efficiently and promptly on a steep grade and that ignition is perfect. Examine the wheels, to see that they run true, and test the springs by rocking the car. The swaying should stop immediately when you cease your efforts. When you have satisfied yourself that the car is what it should be, get an experienced friend to go over it carefully, and then you will be justified in binding the bargain.

Chapter Two: Operating the Car.

It is possible for a man to learn to operate a motor-car, perhaps, without receiving instruction from a man of experience, but it is a poor policy. He will save himself a lot of trouble, and probably some expense, by seating himself, figuratively, at the feet of an experienced operator until he has learned the first principles of the chauffeur's art, and at the same time has obtained a general idea of the principles involved in the construction of the machine.

The first lesson relates, of course, to steering. On a straight road this is soon learned. Then come the corners, and there will be little difficulty here if it is remembered that they must be taken slowly with the machine's making a wide turn. The steering device should be moved gradually, and not with a jerk. Slow down with the throttle rather then by resorting to the brakes. Particular care must be taken on slippery roads, especially asphalt pavement—the bug-a-boo of the motor-car driver. Even a slight turn of the wheels will cause them to skid, that is, slide to the side. When a car starts to skid, the novice is apt to lose his head, and so make a bad matter worse. The expert generally is able to save himself by the simple expedient of turning the front wheels in the direction in which the rear wheels are sliding, making cautious use of the brake at the same time.

Perhaps you have seen an amateur trying to run up to a curb when on a slippery road. The chances are that the rear wheels skidded against the curbing with great force, perhaps damaging them seriously. Now let an expert show you how to avoid that. He runs the car gradually in the direction of the sidewalk, then suddenly turns the steering wheel and makes straight for the curb. The rear wheels start to skid toward the street, but our expert quickly

THE AUTOMOBILE IN UNCLE SAM'S SERVICE.—SEE PAGE 14.

turns the front wheels again parallel with the sidewalk, and the car comes gracefully to a stop beside the curb.

"It is simple enough," says the young man, "but it takes practice." Indeed, the whole matter of steering is merely a question of practice. There are only a few rules. The first is to drive slowly on a road where there is much traffic, and the second is like unto it—namely, to take corners at moderate speed. If this latter rule is not observed, it often will mean going around a corner on two wheels, a practice which in more than one instance has resulted in leaving the chauffeur sitting disconsolately in the middle of the road, while his machine tried to butt down a fence or to climb a tree.

An automobile is not a thing to take liberties with, for it has a way of resenting them which sometimes proves painful. Many a chauffeur has received a badly sprained wrist as a result of a bit of negligence in starting his machine. If the crank-handle is pulled up in such a way that it presses against the fingers, rather than the palm of the hand, in starting the engine everything will be well. If, on the other hand, the operator pushes the handle when going past the compression, there is apt to be a kick which will remind him of the muzzle loading shot-gun, and leave him with a sore arm for a week.

The engine is the heart of the machine, and it needs careful watching. The emergency brake always should be set before the engine is started, and kept so until the operator is ready to start the car. Neglect of this simple precaution has resulted in many a machine's running away.

Chapter Three: Care of the Machine.

"Why is it," inquired one motorist of a friend, "that you have so little trouble with your machine? Mine is in the repair-shop half of the time. It is because you have a better make?"

"By no means," was the reply; "it is merely a matter of good care. I think that with decent treatment any car of reliable make will give good service. Perhaps it is because I take care of my own machine, or, possibly, because I am a bit of an old maid by nature, but I never start on a run without being sure that all the oil and grease-cups are filled, that there is not a bit of rust on any part of the mechanism, and that the tires are in perfect condition."

Tires! I verily believe some motor-car owners think that the manufacturers make them as poor as possible, so that they will wear out soon and make necessary the purchase of new ones. Now, as a matter of fact, a good tire should cover three thousand miles before it wears out. It will not, though, unless given attention. Many hired chauffeurs will allow a car to stand for days in the garage with tires resting in in a pool of oil. No tire will last long under such treatment. Oil will cause it to rot and go to pieces. When a machine is standing idle for any length of time, it ought to be jacked up, so that the tires will not rest on the floor at all.

Large tires are better than small ones, as a rule, just as big wheels are better than little ones. It is a mistake to run on a flat tire if such a thing can be avoided, and generally it can be by having a substitute tire on hand ready for an emergency.

The question of where to house the machine bothers many prospective motor-car owners, especially those who do not own the houses in which they live. The use of a portable garage will solve this difficulty; such a structure can be secured at small cost, and it will give such excellent service that any man who can afford an automobile can afford a garage in which to house it.

Chapter Four: On the Road.

Once out on the road, having mastered the first principles of motor-car management, the novice must remember that other people have rights which he is bound to respect. He should be particularly careful in running up behind and passing vehicles which are drawn by horses.

He should remember, also, what a good many automobile owners learn only by experience—that it is possible to add to the life of a machine and to keep down expenses for repairs by exercising a due amount of care in driving the car. For instance, it is bad for the tires, and dangerous, too, for the occupants of the car to cross railroad tracks at high speed. To apply the brakes suddenly also entails a severe strain on the machine, and is not often necessary. During wet weather it is possible to prevent wrenching the machine as a result of skidding, by using an anti-skidding device on the rear wheels.

Wabbly wheels are not desirable, but they often result from running the machine in the street-car tracks. In crossing street-car tracks, by the way, a careful motor-car driver does so at an oblique angle, when possible. It is a wise motorist who pays particular attention to the lubrication of all the bearings on his machine. If there are no oil cups, it may be necessary to make a new application of oil every 100 miles, but this attention is one which ought not, under any circumstances, to be omitted.

Bearing all these things in mind, and exercising a reasonable amount of intelligence, any ordinary man, or woman either, for that matter, may become a competent driver of a motor-car within a comparatively short length of time.

TEACHING A STUDENT OF THE AUTO SCHOOL HOW TO START, SPEED, AND REVERSE A MACHINE. THE APPLIANCES SHOWN BEHIND THE MACHINE REGISTER THE HORSE-POWER DEVELOPED.—*From "Harpers Weekly." Copyright 1900. Harper & Brothers.*

Motor Car as Constable's Aid

As Told by an Official of LeGrand, Colo.

From Motor Age.

IN the little town of Los Banos, in Merced county, is a man by the name of Mace Roberts, the constable of the town and neighborhood, who uses a car for transferring prisoners from his district to Mecred, the county seat, forty-two miles distant. Before getting the automobile it took two days' time to cover the distance by team, over night and hotel accommodations amounted to more than $15, which amount the county allowed for each prisoner. As there are about sixty trips made during the year, Mr. Roberts figured on a quicker and cheaper way of transporting the prisoners to the jail.

The county, of course, would not buy an automobile, but Roberts went ahead and bought a popular runabout with what spare money he had and began covering the 84-mile trip, including return, in one day. Instead of paying two-thirds of the amount collected for each trip to the livery stables he retained it for himself. At first, there was nothing said by the livery people; they expected him to have trouble, then they would have good reason to make a complaint. As Roberts was a machinist and worked at his trade in his shop when not attending to official duties, he was able to keep the car going at all times and there has never been a time that it failed to do its part when carrying a prisoner.

The stable men made a protest when things ran so smoothly for the constable, and requested the supervisor of their district to make application before the board of supervisors of the county to make a change in the rate paid for transporting a prisoner to the county seat. They stated that the present price was entirely too much; that before the advent of the automobile it was all right when horses were used and two days' time was required. The supervisor was wise enough not to want to bring such matters up before the board, but as two livery stables and one were losing money by the new mode of transportation and their pull amounted to a great deal in politics, he put in the claim which went by the board.

When election drew near, however, the farmers put up a hard fight and got all the farmers possible to support them in electing a new constable. Roberts realized his situation and made friends with all he could by giving rides to every man, woman and child that would go with him. No one was allowed to walk or go by while going his way if it were possible to carry him. He even made a rear seat which he used to carry friends, and an extra prisoner when necessary. He made it a policy to treat the farmers with every consideration. When the smoke of election day cleared away, Roberts was found to be elected by a handsome majority and may be seen nearly every week making his 84-mile trip in his runabout.

When asked if he had ever had any serious trouble with the car while out with his prisoners, he answered, "Never had anything more serious than a punctured tire. I have had trouble and had to be towed twice, but, strange to say, I never had anything very serious happen while conveying a prisoner."

"Did any of your prisoners ever try to escape?"

"Yes; one time a boy about 17 years old tried to get away. I do not know where he came from, but he knew how to run the same make of car as mine. He was arrested for stealing something at the railroad station, and I was taking him over to Merced. I was sorry for the fellow and told him I hated to see a boy sent to jail and advised him to try to do better thereafter. This seemed to have encouraged him to try to make an escape, for he took the first opportunity to do so.

"I left him in the seat at one side of the road with the motor running while I was leading a friend's horse past. I should not have left the motor running, but my friend wanted his horse to get used to it. I spent some time with the horse, petting him and talking to the owner, and was some distance from the car when all at once I saw it moving off. At first I thought the boy had accidentally thrown the clutch in. I ran as fast as I could toward the car, but soon saw that my prisoner knew how to handle it and was sending it down the road as fast as it could go. I shot toward him four times to scare him, but it did no good. I think I could have shot him, but did not want to kill him, as it was

a petty offense for which he had been arrested and he evidently came from a nice family.

"My friend saw the predicament in which I was placed and immediately turned his horse around and we started in pursuit. We did not expect to catch him unless something happened to the car or fortune favored us some other way. We followed up at a good speed but the car was slowly disappearing in the distance. This occurred in Miller's field, and there is about a 20-mile stretch of road without a house in sight. In fact, there are only three houses between Los Banos and Merced, or until you get near Merced. I suspected the boy would leave the car and take to his heels at the first opportunity when he was out of sight of us.

"We were just beginning to think our case a hopeless one when the horse started to run and we heard a whirr and buzz and the toot of an automobile horn behind us. I turned to look back and there saw a steam automobile. It slowed up to pass us; I jumped out, showed my badge and told our story. There were two men in the big car and they told me to get in the tonneau and we would give the thief a chase for his life. The operator opened up the throttle and it shot ahead like the wind. My little car was not geared high, as I had put on a big rear sprocket for going through sand, and it could not go faster than twenty miles an hour at the best.

"The thief was still in sight when we commenced the chase with the steamer and it was not long before we could see plainly that we were gaining, and in less than fifteen minutes we were within half a mile of the fugitive. No doubt he had failed to notice us until then, for he immediately stopped and left the machine, climbed through the wire fence of the lane and started through the field afoot on a run. We took in the situation at once and could see that if we went where my machine was standing we could not cross a ditch to get into the field that he was scurrying across. At the place we were then we could, so jumping out I cut the four wires of the fence with my pliers, which I always carried in my coat pocket, and we gave chase across the salt grass that grows more or less in little bunches like bunch grass. Between the squirrel holes and ruts it looked as if we would wreck the big car, but the operator was heart and soul in the chase and it was not long until we were near enough to call the young man, who, seeing the hopelessness of the case, stopped and waited for us.

"That was the only time I ever had any trouble like that. I guess the comparative ease with which we overhauled the fugitive had a moral effect upon others, or maybe none of the other prisoners knew how to operate an automobile. At any rate, it's been easy sailing since that time. The people around here are now thoroughly convinced of the practicability of the automobile, particularly when it applies to a constable's business."

An Indiana Hill Contest

From The Automobile.

Michigan Hill is one of the steepest grades in Central Indiana, though it is only a half mile long and not more than eighty-five feet high. Located five miles north of Indianapolis, it serves as a favorite trying-out grade for Indiana automobilists.

A regularly organized and officially conducted climb is to take place during the latter part of May, so the other day eleven Hoosiers decided to try their skill in surmounting the half-mile incline. An Olds, a Franklin and a Winton were the three most successful climbers. Each car carried its full equipment and three passengers, one of whom was the driver. S. W. Elston piloted the winning Olds in 54 seconds; Charles Talbot guided the Franklin up the hill, and Charles Newby ascended with the Winton in one minute. Only a single trial was allowed each car and the narrowness of the road allowed only one vehicle to start at a time. Though the figures cannot be accepted as official, despite the excellent clocking of Frank Melcher, B. F. Meixell and O. L. Weaver, the results give an excellent idea of what may be expected in the advertised open contest. The hill was in perfect condition, and it is to be hoped that the same situation will exist on the May date.

The start was made from a complete standstill and the event was held under some difficulty, as it was impossible to keep all other vehicles off the hill.

The farmer is looking with longing eyes at the motor-driven vehicles which pass him on his way to town, and it is dawning on him that the horseless vehicle is a great time saver. Not a few farmers have succumbed to the new method of transportation, and this more than anything else terminates quickly the antagonism which the automobile still meets with in remote parts of the state. Of course, the roads question is becoming a vital one, and interest in it is apparent on all sides. The rainy season is a dreaded period for those off the main highways, for some of the Indiana roads are at this time only such in name. It is as certain as the rising of the sun that the average farmer after investing in an automobile is going to be a most persistent shouter for highway improvement; at least that is the impression one gets from observing things in Indiana.

READY FOR THE RUN BETWEEN THE DETROIT POST OFFICE AND THE MILWAUKEE JUNCTION STATION.—SEE PAGE 14.

The Conquering Automobile

As Told by George Dupuy, American Correspondent of the Paris "L'Auto"

From The Independent.

I SHALL always remember, in the year of 1886 or 1887, I was in the Bois de Boulogne, in Paris, on a glorious Easter morning, in company with my uncle, and both were riding bicycles.

We were quietly enjoying our ride under the lofty green trees when we heard, in the distance, an unusual noise, like that of a pair of cymbals struck at rapid intervals. We thought the Salvation Army was somewhere in the vicinity; a little further on an offensive smell of burnt petroleum made us discover, standing at a turn of an alley, a remarkable thing. It had the shape of a country buggy, set on immense outstretching springs and four huge iron rimmed wheels. There were two small seats on the top and a bicycle handlebar in front. The strange machine was quivering all over like a suffering beast, smoking like a chimney, while something inside of it was all the time cymbaling hiccoughing, hiccoughing, cymbaling enough to break the windows of the whole capital.

A lot of inoffensive but puzzled walkers surrounded that mechanical orchestra, as two elderly gentlemen, one French, the other a German, were bent over it, each armed with hammers and enormous wrenches. They were in shirt sleeves, arms tucked up to the elbow, with dirty, greasy hands and sweating faces. I also remember very well a little crank, or piston rod, full of trickling dark oil, that would run fore and aft at a terrific pace; possibly that was the trouble. My dear old uncle, who ever possessed the greatest inventive imagination and could always give me judicious explanations on any subject on earth, told me that there was something wrong with the "boiler," and that they should unscrew some "blast pipe" he knew of, to fix it, etc.

Meanwhile the two men—two old friends, I could judge—were addressing each other in terms that were much to be regretted indeed, on such a beautiful morning. The German would call his partner a "poucre l'impezile (an imbecile) with his indescribable national accent, inflicting on his comrade the responsibility of the accident. In fact, the conjuncture was amusing enough. The unfortunate pioneers of the horseless vehicle could neither stop their motor or cause the machine to move an inch!

These two persevering engineers, who, after much toil and drudgery, succeeded in pushing their noisy, grasshopper-like affair toward the gates of Paris, at the rate of eight miles an hour, were: the German, Mr. Daimler, and the Frenchman, Mr. Levassor, the two great geniuses to whom the world owes nowadays the powerful, noiseless, comfortable, swift and easily driven motor car.

Science, labor and marvelously organized brains have produced, at the present, a machine perfectly adequate to the modern man's intense life and ambitions. To reach that ideal, it must be said that many fortunes and hopes were lost, many lives sacrified. Speed and Death are two lovers walking hand in hand, and our "daring devils," Oldfield, Jenutzy, Fournier, Chery, Lancia, Marriott and others could tell of their thrilling sensations on that subject.

The progress accomplished in the construction of motor cars for the last ten years is almost incredible and far more rapid than that of the railroad locomotive. In 1896 three intrepid French autoists, driving a sixteen horse power Panhard-Levassor, covered the distance of Paris to Vienna—about 600 miles—in 32 hours, an extraordinary performance for the epoch. In 1901, Henri Fournier went from Paris to Bordeaux—310 miles—in 5 hours and 40 minutes, in his sixty horse power Mors. This year Demogeot covered five miles in 2 minutes 37 seconds in Florida in a 200 M. P. Darracq, and Fred Marriott, the famous driver of the Stanley steamer, broke the mile record, the next day, in the most wonderful time of 28 seconds.

The automobile is the idol of the modern age. Affection, love, ill will, deception, envy crawl around it. The man who owns a motor car gets for himself, besides the joys of touring, the adulation of the walking crowd, and the daring driver of a racing machine that bounds and rushes and disappears in the perspective in a

thunder of explosions is a god to the women.

Now the advantages of the gasoline motor, at both industrial and sporting points of view, are numerous.

There is an exhibition of agricultural implements worked by motors which is at present taking place in Paris at the Galerie des Machines, and cannot fail to interest those who are in any way connected with farming. Side by side, with the old fashioned and familiar farm utensils, one sees gasoline engines applied to pumps, plows, hoists, threshers, etc. It is only the sight of the cow sheds and sheep pens that reminds the visitor that this is really an agricultural and not a motor exhibition.

Santos-Dumont, the uncontested king of the air, has for more than four years, used gasoline motors to propel his cigar shaped airships. Now he has abandoned the inflated balloon for the flying machine, and is actually building in Neuilly St. James, near Paris, a big "helicoptere" fitted with large wings and propellers. With it the little Brazilian hopes to realize Jules Verne's dreams and go to the North Pole in one flight from some point in Norway. His new engine is a 45 degree, eight cylinder, water cooled, with exhaust valve placed at the top of the breeches to insure a perfect balance when in motion. It develops thirty-two horse power at a normal revolution of 700 to 900 turns a minute and weighs, with a 40 centimeter fly wheel, only 110 pounds. Santos-Dumont says he will reach a speed of at least 60 miles an hour by calm weather and fly against any wind.

A few weeks ago, at a meeting of the New York Motor Club, the intrepid American explorer, Walter Wellman, told the assembly of his intentions of also reaching the Artic point in an airship. Mr. Wellman's dirigible balloon will be propelled by an engine built on the very same principles and even lighter than that of Santos-Dumont. He will also take along light automobile sleighs fitted with long screw propellers that will plow the snow or bite the solid ice. The only obstacle to the possibility of all that is the congelation of the oil at temperatures reaching 60 degrees below zero and more. Industrial alcohol will probably render better services as a fuel.

Fancy has also claimed its rights in the new industry, and we have in France now the motor "skate," invented by Alphonse Constantini. Each roller skate is fitted with a 1½ M. P. motor, air cooled. The gasoline tank, which holds three-quar[illegible] of a liter of fuel, is carried on a [illegible] the waist of the motor skater. [illegible]f gasoline, it is said, allows [illegible] 5 kilometers to be covered. The little tank also carries, attached to it, the coil, the accumulator and the levers for controlling the speed of the engines.

Holding the throttle lever in his right hand and having closed the battery circuit, the motor skater merely pushes off one foot, as an ordinary skater does, and as soon as he hears an explosion he starts the second foot in the same way. Constantini says he can attain a speed of forty miles an hour, and, encouraged by his first success, is now building skates of less power in order to popularize the new sport. The invention is all right, but—this is a personal suggestion—suppose, for some reason or another, one of the engines should stop. Can you imagine the motor skater on one leg, the other off the ground, with a dead motor hanging to his sole?

MOTOR SKATES.

A more interesting application of the gasoline engine is the motor boat, which is already used in many countries as a light, swift and safe transporter on rivers and lakes. On the wild Amazon River in South America, the speedy little motor boat carries the raw India rubber that will be turned out into tires for the motor car. It is also a charming instrument of sport.

I am extremely fond of hunting, and had last year, in the great Eastern woods, some delightful sensations with a small, noiseless gasoline launch. His royal highness, the moose, likes the stillness of the forest in the fall, the calm, shaded river banks or lake shores, where he can peacefully gnaw the bark of the silvery birch

tree, where the silence is hardly disturbed by the chirping voice of the woodpecker. With an old French Canadian, who knew the ways of the animal, we once approached a big bull moose on a New Brunswick lake. It was by the dim twilights. As soon as we perceived his glimmering form, perched on an overhanging rock and browsing some high foliage, we stopped the little motor—the boat was noiselessly gliding on its acquired propulsion. Pang! pang! pang! three successive shots awakened the echoes, a mass fell in the water, and a few minutes later, having restarted the engine, we were pushing to the shore, armed with poles, the big brown moose with his great horns half sunk, and the blood of the beast would blend with the glittering gold and purple bands spread by the setting sun on the still surface.

And now the last application of the automobile will sadden the soul of the philanthropist. In several countries of Europe powerful blinded war cars have recently been built and satisfactorily tested.

In the future battles it will happen that a treacherous bullet fired by a sixty-shot Hotchkiss or Maxim, maneuvred from inside the swiftly going Mitrailleuse, will kill an officer who had been a faithful subject of "Queen Motor Car" for many years. "The Conquering Automobile!" Is not there some involuntary irony in the title of this chronicle?

MOTOR SLEIGH.

A Wise Man on Good Roads

Being a Speech by Representative Lee, of Georgia

From The Automobile.

GOOD roads was the keynote of one of the ablest speeches made in Congress this session. It was delivered in the House of Representatives early in April by Representative Lee of Georgia, who, with telling force, brought out fact after fact about the deplorable condition of American roads generally. It is a significant fact that his speech was listened to with the closest attention by members of the House.

Representative Lee began by saying that all civilized governments build roads, and that all, save our own, have some established system for building and maintaining public highways, under the direction of skilled and competent officials. Early in this century some work of this kind was done by the Federal Government. The dawn of railway building and steam transportation, he said, seems to have largely drawn public attention and enterprise from our common highways, as a natural consequence, for more than fifty years—years that have been full of throbbing life and vigor for us as a nation; years that have no parallel in the history of our race for triumphs of man over nature; years that have been filled with a succession of wonders and triumphs in every field of human thought and endeavor. But the greatest wonder of all these wondrous years is that as a nation we have utterly ignored our country roads, and we seem surprised when we look about us and find them no better than they were half a century ago.

Continuing, Mr. Lee said: "The able Secretary of Agriculture estimates that the cost, the extra burdens imposed upon this country by bad roads, is not less than $600,000,000 annually. These figures almost stagger credulity, but who can gainsay them? And yet, when a bill was recently introduced in this House to appropriate

$25,000,000 annually for rebating this great and continuing loss, it was ridiculed in some quarters as a fake—visionary and impracticable—as if it were wild and unreasonable to stop a leak of hundreds of millions of dollars with this comparatively small appropriation. But those who reviled it have not seized upon the opportunity to propose a better plan.

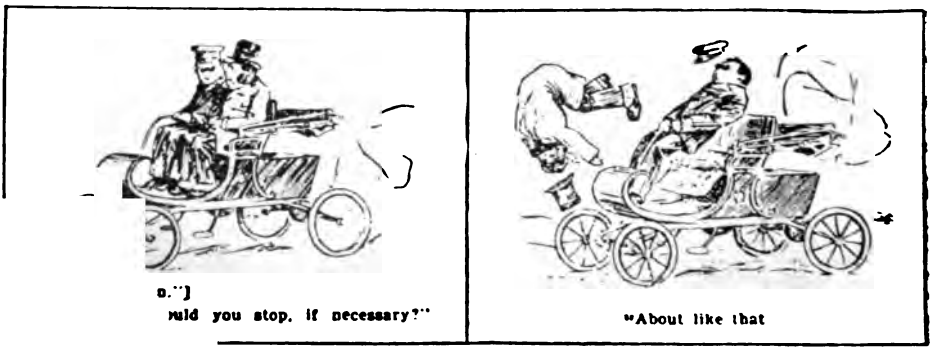
"Forty millions of dollars were promptly handed out from the public treasury to pay for the privilege of spending $200,000,000 more to dig a ditch in foreign lands more than a thousand miles from home. Not one-hundredth of 1 per cent of our people will ever see it; not one in 1,000 of our people will ever feel his burden lightened or his joy and comforts of life increased when it is finished. One-half the sum it will cost, if intelligently expended upon our public highways, during the next ten years, would give one hundred times as many comforts and pleasures to one thousand times as many of our people. The canal will be a great public utility, no doubt, but better roads are a crying public need, now—every day.

"If the army needs a road, it gets it. Even our possessions in the Far East—the Philippine Islands—have been the objects of our solicitous care to the extent of expending $5,000,000 in building roads for them. Porto Rico, though not much larger than some of our counties, has had over $3,000,000 expended upon its roads since it came into our possession. During our brief occupancy of Cuba our government expended $2,500,000 upon its public roads. Even those little dots in the Pacific, the Hawaiian Islands, have come in for a share and have a contemplated expenditure of $2,500,000 upon their roads. These various sums aggregate $13,000,000 that have been expended during the past few years in building roads, not a foot of which lies within the United States. What have we against our own people that we should deny to them blessings that are freely extended to the idle islanders of the seas?

"But other interests and forces are coming to the aid of the solitary and unorganized farmer. His friends in the cities, having grown rich and equipped themselves liberally with self-propelled vehicles, want better roads to roll them over, and they are interested in the problem of the roads. The manufacturer, learning from experience that bad roads interfere materially with his obtaining stead yand continuous supplies of raw material, wants the roads improved. The millions of operatives in the mines, factories and shops are learning that bad roads increase the cost and disturb the regular supply of food products from the farms which they must have, and they want better roads. The merchant has learned that bad roads retard and repress trade, and he wants them amended. Our Post Office Department is greatly hindered and hampered in its efforts to supply to the country regular and reliable mail service for lack of better roads. In fact, it would be hard to name an interest, an industry, or an individual who would not be benefited by better roads."

Representative Lee said that if he had the privilege of writing upon the statute books a law that had more of the promise and potency for immediate and lasting good to all the people than any law that has been proposed or discussed in the House, it would be a law creating a Department of Public Highways, to act through and in conjunction with state, county and municipal authorities in redeeming the country from the throes and thraldom of its miserable roads; and he would give that department not less than $50,000,000 a year until the work had reached a satisfactory stage of advancement.

"So here we are," said he, "right in the middle of the road, and the sorriest kind of a road at that. 'A condition confronts us, not a theory.' Are not a hundred years of observation long enough to convince us that the roads will not reform themselves?"



o."]
uld you stop, if necessary?"

"About like that

Mark Twain as a Motorist

What the Famous Humorist Thinks of Motoring.

By T. Quiller Wright

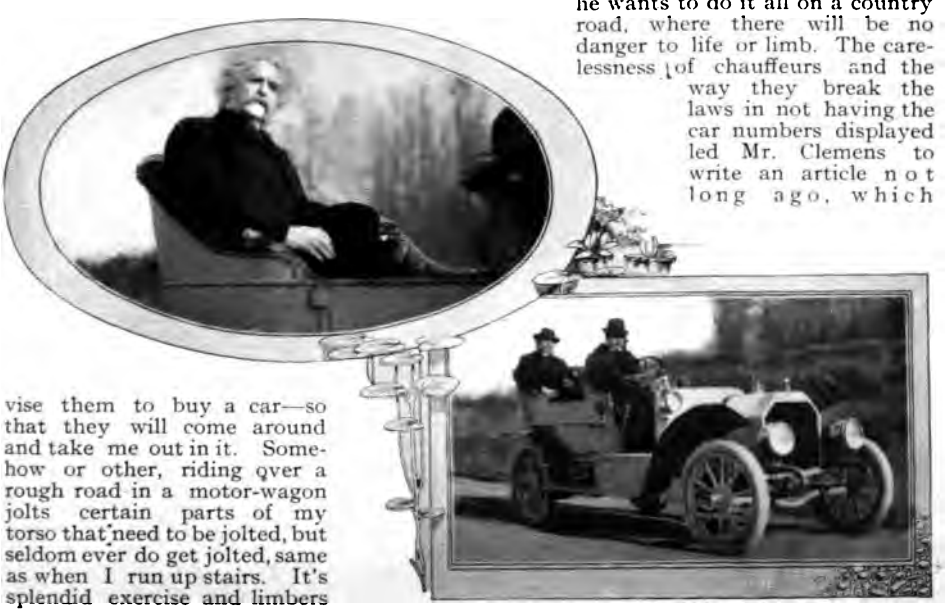
From Motor.

IF MARK TWAIN'S "Jumping Frog" could for one moment know the strenuous life that the great humorist leads nowadays, he would probably choke up a few more shot, give one wriggle and make one last, grand jump from his crumbling sepulchre. Mr. Samuel Clemens, better known to millions of people as "Mark Twain," enjoys motoring immensely and is a remarkable pattern of an motor enthusiast who is seventy years "young."

Several years ago Mark Twain's health was in a "terrible state of condition," but now with his three to five meals a day, plenty of rest in bed and motor trips, he finds himself stronger and healthier than many men half his age. He has a much greater preference for a motor-car than for a bicycle and considers the former machine far superior to the latter. "I do not own a motor-car," says Mr. Clemens, "but I recommend them to all my friends and advise them to buy a car—so that they will come around and take me out in it. Somehow or other, riding over a rough road in a motor-wagon jolts certain parts of my torso that need to be jolted, but seldom ever do get jolted, same as when I run up stairs. It's splendid exercise and limbers up and promotes springiness—of the stair boards."

The accompanying pictures of Mr. Clemens in an Oldsmobile show him as he really is. One of these depicts him exactly as he looks when interested in any particular subject. His deep-set eyes and wavy hair, and his nearly serious, stern, yet kindly expression, are all noticeable. Few men have ever had so many awful portraits of themselves printed in newspapers and elsewhere as Mark Twain. His usual cigar reposes in his left hand, in the above photos. He refrained from smoking long enough to have his picture taken. This broke one of the cast-iron rules laid down by his own individual Board of Health which is: "Never smoke while asleep and never refrain from smoking while awake." The cigar here shown is doubtless one of those which he buys at the rate of $6 per barrel. He admits that they make considerable noise when they burn, but he smokes them nevertheless.

While Mr. Clemens delights in speeding, he wants to do it all on a country road, where there will be no danger to life or limb. The carelessness of chauffeurs and the way they break the laws in not having the car numbers displayed led Mr. Clemens to write an article not long ago, which



appeared in one of the monthlies. He was further prompted to do it, owing to the fact that a member of his family had come very near being killed by a reckless driver, and Twain himself also had several close shaves. He suggested a punishment to fit the crime for those who knock people down and do not bother to stop and have such small indistinct numbers that they cannot be read even at a short distance. He recommends that offenders should be forced to carry numbers on the rear of their machines, two, three and four feet in height for the first few offences; larger number for chronic cases. This awful disgrace would cure them, he thinks.

It is most interesting to hear this three-score-and-ten-year humorist tell of automobiling. Many stories about him in this connection have been circulated at dinners, in newspapers and as "fillers" in farm and home magazines. Many of these, some from patent medicine almanacs, are very new and surprising to Mr. Clemens. They give complete details of little accidents and adventures in advance, so that when Mr. Clemens reads about a certain breakdown and certain comical things that he said, he is able to guard against and avoid that accident and he saves all the witty sayings that it was foretold he would utter upon that occasion, for some future adventure.

Twain was visiting a physician friend of his not along ago and tells how the medical man wanted to engage a new chauffeur. The first applicant for the position was a big, strapping six footer with great broad shoulders, who looked strong enough to pick up the touring car and carry it. The doctor admired his splendid physique, but doubted if the man possessed much mechanical ability. "Have you had much experience running motor cars?" he inquired.

"Sure," was the straightforward answer.

"But have you much technical knowledge of machinery? I want someone who can make repairs when the car breaks down. Do you know how to take gears apart and take out the clutch, or put on new tires?" The bulky applicant said he could do all these.

"Well," ventured the allopath, "as far as your physical condition is concerned, you certainly look strong enough to take good care of a car, if you can run it. What is the first thing you do when you find that your carbureter is out of order?"

"Well, I tell ye, doctor," replied the other, "I honestly don't never have no trouble with it. It never gits out of order. I ain't been sick one day for the last two year."

AUTO-MANIA.

ASYLUM ATTENDANT—"This is our new ward for people afflicted with violent auto-mania."
VISITING PHYSICIAN—"Where are they? I dont see them."
ASYLUM ATTENDANT—"Oh, they're all under the beds, fixing the slats.—*From Judge.*

Motor Talk
A Magazine of Out Door Sports

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Editor's Note

Owing to circumstances beyond our control, we have been obliged to omit the installments of the "How and Why of the Automobile," during April and May. We expect, however, to resume the publication with the June issue, and trust without any further interruption. The wide spread publicity of these articles, and the interest with which each new installment is awaited makes the omission of an installment especially to be regretted.

Road Development in West

From The Automobile.

One rural delivery route within a few miles of Kansas City, Mo., has been discontinued and others may be because of the miserable condition of the Missouri roads—this money being derived from dramshop licenses, and most of it collected in Kansas City—comparatively little attention is given to the dirt roads, and it is because of this that the rural service has been discontinued.

An amendment to the Missouri State Constitution, permitting counties to levy 15 cents on the $100 valuation for roads improvement purposes has been declared unconstitutional by the Missouri Supreme Court. It was held that the act was not good law because it did not include in its provisions Kansas City, St. Louis and St. Joseph, the three largest cities of the state. The amendment was voted in 1900. It raised the former tax five cents. Curiously enough, it was a railroad which defeated the act. The Burlington, sued by Marion county, carried the case to the Supreme Court. Many of the counties had made the levy and provided for its disbursement.

Senator Armstrong, in his proposed amendments to the New York Highway law, provides that every railroad where crossings at grade shall be abolished. In a year from this date, when the State Engineer, acting through the town boards and boards of supervisers, has designated on a map the main highways that are to be improved with the $50,000,000 voted by the people, then it will show clearly how many of these main highways are crossed at grade by railroads. Then it will be possible to intelligently take up with the state railroad commission the abolishment of each one of these grade crossings at some time during the next ten years, so that the improvement of the main highways and the abolishing of the grade crossings will be intelligently and systematically done.

An automobilist, speeding along a country road at a rapid clip, ran over and killed a chicken. When he returned the same way an hour later, a man was standing in the middle of the road, signaling excitedly for him to stop. He brought the machine to a standstill, and there lying on the roadside was the poor chicken whose life had been snuffed out. He was prepared for the worst, when the following dialogue took place.

"May I ask, did you run over this chicken?"

"Yes, I'm the guilty party, but I am willing to pay for the damage. How much do you want?"

"Oh, that's all right. You see, before I took the chicken home, I wanted to make sure how it had been killed. If your automobile ran over it, I guess it's good to eat."

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MOTOR TALK

A MAGAZINE OF OUTDOOR SPORT

JUNE, 1906

see story page 5

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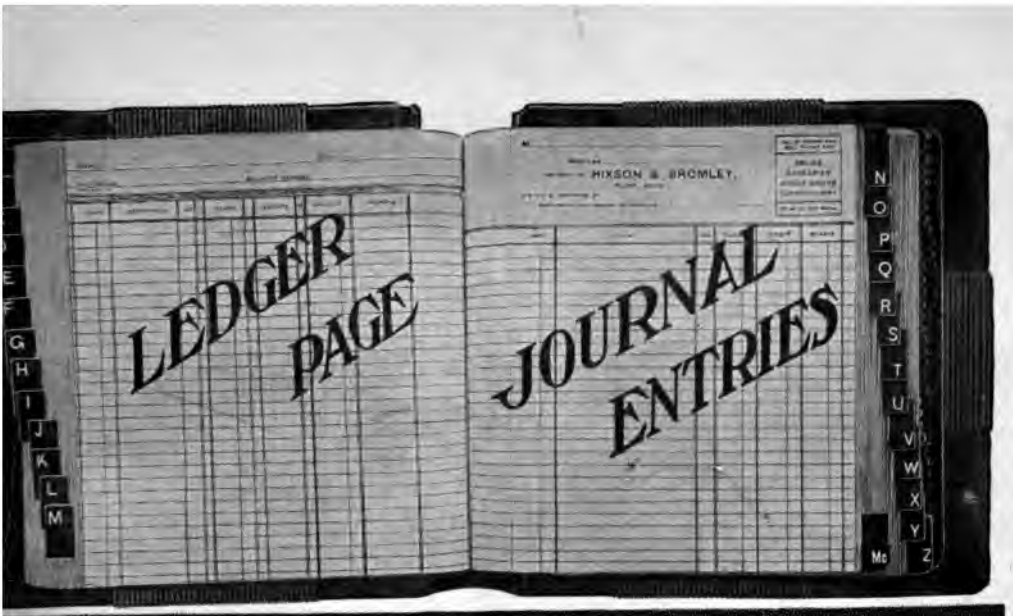

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OFF FOR A SPIN IN A OLDSMOBILE PALACE TOURING CAR.

Motor Talk

A Magazine of Out Door Sports

VOL. II. JUNE, 1906 NO. 6

The June Economy Run

An Account of a Trip over the Route by George Dupuy

From The Automobile.

A FRENCHMAN must be forgiven if he is fastidious in the matter of roads, for his country is celebrated in this respect above all others. I have journeyed in an automobile from New York to Albany, and the highway in the main is excellent. I have also toured from New York City to Springfield, and I must again repeat my good opinion of the road.

But the portion of the route selected for the June Economy Run of the New York Motor Club which lies between Albany and Springfield was unexplored country for me, and therefore I seized with avidity the opportunity of doing this trip with Harry Unwin, chairman of the Contest Committee. The Albany-Springfield section figures as the second day of the economy run, and this picturesque Berkshire country proved enjoyable in the extreme for one who has covered a good many of the scenic parts of Europe. I said that it was most enjoyable, but I should have qualified the statement that such would have been the case had it not been for the terrible roads, which to me seemed nothing better than chaotic lines drawn across hills and through vales by some devilish hand.

Of course, it was true that we left Albany in the rain, and there had been more of it previous to our starting. But, Great Heavens! what horrible quagmires we encountered. Save for the State road, which lent its resting smoothness for two score of miles, we enjoyed the scenery most of the time after the fashion of those sailors passing alongside a beautiful island and trying to admire the shores while uncomfortably their boat rocked on a rough sea. One of us, enthusiastically pointing to an imposing mountain in the distance, would exclaim: "Oh, say, look at that!" And just at the second of his last word the right rear wheel would sink and disappear in the nameless mud! And, always admiring the great big mountains over yonder in the distance, every one of us would jump off, taking great care not to kick the blessed camera, and, amidst the most wonderful landscape in the world, we would together buttress our shoulders against the dirt-sprinkled tonneau. But never mind, the trip was interesting from start to finish.

Now, for the benefit of the contestants, I am going to indicate as faithfully as possible the itinerary of our journey.

Thursday morning, 7:30 a. m.—We leave Albany via State street, then turn right into Broadway, and a mile and a half further we turn to the left and cross a drawbridge. There we give fifteen cents, the toll fee. On crossing the

bridge we turn sharp to the right (there is a newsroom on the corner). We then go about a quarter of a mile, and then turn to the left in Columbia street. Here contestants should remember that they must not turn with the trolley, but keep straight ahead to East Greenbush. The road is awful. It has been raining the night previous, and it is going to rain "some more." The sky grows dark. All around us are laid harmonious vales, valleys, and plateaus, newly painted with that sweet green of Spring. Although Mr. Unwin is an adroit driver, our coats and faces receive disagreeeable hunks of mud from time to time. Now it is raining. I thought it would.

Here is Schodack Center, a hamlet that contains an empty horseshoer shop. The autometer accuses us of $10\frac{3}{4}$ miles. At the top of a hill on the left we pass a large white house with a cupola, probably built in the colonial days. There we turn to the right (remember this), and a pump marks the intersection of the fork. Then we continue straight ahead to North Chatham.

If you are not in a hurry, before we reach Valatie, let me tell you what Mr. Unwin did at North Chatham. Mr. Unwin, our amiable host and driver, has been doing a little thing which, *entre nous*, has nothing to do at all with the economy test of the N. Y. M. C. Without asking permission he jumped from the car and implanted a kiss on the fresh, purple, pearl-setted mouth of a sweet little brunette of sixteen, for the simple reason that the pretty lass brought us two heavy pails of water for the machine. When this little act was performed, the girl—who possibly had never been kissed before—asked me, with an angelic smile, "If the gentlemen wanted anything else." But before I could have said, "You bet," the machine was off at top speed.

Now, Valatie. On leaving the village we climb a long hill and turn to the left—20 miles. Here we turn sharp to the right and pass a wide river over two covered bridges—23 miles. Here I shall not make any facetious remark about increasing the speed. The figures speak for themselves, and the drivers, consequently, know what they have to do. At that mileage a big red barn stands on the roadside opposite a large white house. Turn to the left. Half a mile further up we meet a fork near an un-

"ALL PLAY AND NO WORK" IS NOT BELIEVED IN BY THE OWNER OF THIS CURVED DASH RUNABOUT.

painted church. We again take to the left, and then the road leads directly to Chatham. At the end of the town is a fork near a big hotel, the Windsor; we take to the right, pass the tracks a couple of hundred feet further on, and then turn to the left. Then the road leads directly to the State Line—30½ miles.

Here the automobilist will travel in a splendid country, very fertile and cultivated. Little streams, bordered with willows and poplars, peaceful valleys, and great, bold hills in the distance, are parts of the picture. Alongside the railway tracks we find the monument marking the State Line, dividing New York and Massachusetts. We take lunch there in a good old road house, where the milk is delicious.

Now the enchanting scenery commences. The road leading to West Stockbridge is better. We follow the trolley tracks. Parallel to the road and joined by a soft slope of about five hundred yards, runs a high, rocky ridge strewn with tiny boquets of pine and birch trees. On the left hand lays a flat country, relieved by a series of small lakes. At the 51st mile a bad double turn presents itself; it is a railroad bridge, under which we pass at low speed after two sharp angles. We follow the trolley again.

Great Barrington—52 miles. A delightful, clean, quiet little locality. We stop in front of the automobile station on a wide, asphalted avenue and take gasoline and water. The afternoon has been pretty warm, and I suggest that a cool glass of beer or something would not be harmful, but, with a sad, smile, Mr. Unwin informs me that this is a "dry town." "What do you mean?" I said, "I don't understand." "Well," he replied, "you will understand in a minute; I am going to introduce you to a gentleman, here, over the way; simply tell him that you don't feel well, that's all."

Rather puzzled, I followed my companion. We entered a drug store. Mr. Unwin speaks in a low voice to an old bearded pharmacist wearing spectacles. This apothecary looks at me and I look to the floor in an uneasy way. Then he makes Mr. Unwin sign a prescription blank; I look over his shoulder. The name he writes is "C. W. Smith, M. D." The druggist looks at me again, rather suspiciously this time, and five minutes later we are in possession of half a pint of ordinary Scotch whiskey. This and the kissing business of the morning I will remember for a good long time.

We leave the town and again follow the trolley tracks—59 miles. We turn to the right and cross the Housatonic river—61 miles, and enter Glendale. From there a wide avenue leads us to Stockbridge. I do not know of anything more charming than this part of Massachusetts. We must be at a high altitude. Dusk comes slowly. On our right, in the distance, the glimmering landscape, limited by rocky chains, fades to our sight; but near us is a green lawn on which stand lofty cedars and oaks, assuming in the soft evening light a pensive attitude. There are no villages nor towns now, but artistic cottages, each in its own park.

The Red Lion Inn, in which we stop over night, is an old fashioned hostelry, exceedingly clean and spacious. It was a very restful night for us, and the excellent breakfast we had in the early morning will also stand as a part of our recollections.

Friday, May 4, was a beautiful day, and over the grand scenery a glorious sun spread its warm smiles from dawn to dusk. On leaving Stockbridge via Main street, we meet a triple fork at the end of the town—mileage, 64 miles. We take the middle road, leave an Indian monument on our left, then the road turns to the right and continues to Lenox —69½ miles, Curtis Hotel. We turn to the right and continue uphill, passing a white church and the Hotel Aspinwall. The seven miles separating Lenox from Pittsfield pass like a dream. Here the highway runs on the mountain flank, and the charmed eyes of the traveler can contemplate, diluted in the blue morning, the faraway rocky domes of the Berkshires, down to their feet; a tranquil, silvery stream; two or three glittering lakes, and, on every plateau, a millionaire's white cottage delicately set between the soft green of the valley and the tender azure of the skies. The road descends to Pittsfield—76½ miles. In Pittsfield, to reach the Central Auto Station, motorists must continue down Main street, two blocks beyond the Square, to Tenner street, then turn to the right, go one block, and then turn to the left.

We return by the same road to Lenox —83½ miles. At Hotel Curtis, we turn to the left and continue ahead—87 miles. At the foot of the hill we cross a bridge, on our way to Lee. The road is as picturesque as ever. Now East Lee—90¼ miles. The road here is perfect. We

pass the shores of a beautiful lake, bordered by a white fence, and right after go uphill amidst the wildest nature. We find ourselves on the top of a high mountain. The spot is very windy; all around us lie distant valleys and villages. The tiny Westfield river jumps among its boulders. Two or three high peaks, miles away, point to the sky. I asked Mr. Unwin to stop a few minutes and let me contemplate at leisure the panorama, which reminds me of the great Klondike.

We shoot down hill on a very rutty and narrow stretch of road and reach West Becket—96 miles. At the fork, in front of the postoffice, we turn to the left and again start climbing a considerable grade. At the 97th mile we meet a fork, turn to the left and continue to ascend. At the top of the hill we pass on the left an old wooden shack blown down by the wind; then we descend a steep slope, at the foot of which we find the Westfield river, already a little larger here.

Chester—105 miles. From here to Springfield, end of our journey, the road stands in a fair condition. Immediately after leaving the town, we turn to the left on a railroad bridge. We are from now on entirely surrounded by mighty hills, shaded with all the tones of spring. The Westfield river widens. Woronoco. There is a big paper mill with an enormous flume carrying water over a distance of half a mile. For fifteen miles the trip is delightful along the picturesque creek, the air balmy and invigorating. We keep a very good gait.

Westfield—124 miles. Before a big tree in the center of the town we turn to the right, and then, following the trolley tracks, we reach Springfield, after having covered a distance of 124 miles.

The conclusion of my two day's experience in that part of Massachusetts is that America should be the first and only country in the world for automobiling, if she only had good roads.

A SUCCESSFUL DOCTOR'S RUNABOUT.—*Courtesy Horseless Age.*

Motor Cars and Good Roads

Some Pertinent Remarks on the Subject by John B. Foster

From Recreation.

WHILE the ultimate purpose of the automobile is far from being merely a speed producer, it is an interesting fact in connection with its development, that those who are fond of the motor car because of its convenience and its utilities are never averse to studying the speed of machines in conjunction with other details connected with them.

In this is to be noted one of those sympathetic relationships between the motor car and the bicycle. Of themselves having no resemblance to one another, both in their way have served the purpose of permitting humans to travel long distances with less fatigue than walking, thereby combining a utilitarian principle with one of pleasure.

When the bicycle had rendered a whole continent half-crazy on the subject of "ball-bearing locomotion," there were hundreds of riders who accepted the wheel merely for the pleasure which they derived from its use. In no sense of the word could they be called "scorchers." Yet they were mightily interested in discussing the speed of the various makes, and pursued bicycle race meetings with an enthusiasm second only to the actual participants in the sport.

So with the motor car now. The "speed mania," as it relates to the few who wantonly disregard laws and statutes that they may enjoy the fascinating serving through space, can with ascribed to the thousands motor car merely for the the pleasure which they and yet it is difficult to hustastic motorist who the question of speed, discuss it by the hour are conversant with

attention which is international con- of the Gordon Cup affairs, and the necessity which exists of so conducting these competitions that they shall bring forth the best possible results.

The Vanderbilt Cup race is assured again for this year in the United States, and it will almost without question be run over most of the course which was used in 1905. Two bad sections of road may be eliminated and the route altered to go further north. Rather than a drawback, this will add to the pleasure of more sightseers, who will be present early to witness the speed cars, and a contest is assured thus early which is likely to be of more interest than either of those which have taken place on Long Island.

While on the subject of the Vanderbilt Cup race, it may not be out of place to say that the residents along the route are actually petitioning the Automobile Club of America to hold it over their roads this year, in contradistinction to the policy which was in vogue in the early part of 1904, when some local opposition fought its taking place. It has been proved that the race may be conducted without harm to the residents of the island, if they will exercise caution for a matter of a few hours one morning in the year, while the sums left behind by visitors and competitors amply reward everybody ten times over for the trifling inconvenience of closing a few highways from dawn until about noon. Possibly there would have been no opposition in the first place, but for the fact that some of the pennydreadfuls ran out of ammunition for a sensation in the heated term, and declared war on the automobile race, trusting for abundant sympathy because the motor cars "were owned by the rich."

The Vanderbilt Cup race [illegible] be in charge of J. DeM. [illegible] New York, who has be[en] man of the racing board [illegible] Automobile Asso[ciation] ert Lee Morrell.

gave abundant satisfaction last year, but declared that he had enough of serving, and would prefer to retire and view the contest as one disinterested.

Mr. Thompson has driven a motor car since 1898 and has witnessed every Gordon Bennett race which has taken place abroad, and most of the important races which have been conducted in the United States. He owns six cars personally and is a wealthy lawyer with a bent toward mechanics, who finds in motoring a medium to pleasure his fancy.

There is no question but the entries for another Vanderbilt Cup race will be numerous. There is too much at stake on the part of American manufacturers not to pursue their intention to wrest from European makers the prestige they have enjoyed as the builders of the fastest and most secure cars.

In connection with this contest it may be added that the motorists of Chicago are agitating the holding of a road race on some section of highway near the city. Western visitors have been many at the two races for the Vanderbilt Cup, which have been run in the East, and with their usual impulsiveness are eager to give the citizens of Chicago an opportunity to see what a wonderful destroyer of time and distance a completely rigged racing car can prove itself to be.

On the whole, it appears as if a cup race somewhere near Chicago, managed on the lines of that which has taken place annually on Long Island, would be a large factor for good. No matter how much ultraconservatism may rail at the automobile and deny its use to the highways on the same terms and with the same privileges as other vehicles, there is not the slightest question but it will be the vehicle of the future, and in no place will it be more popular than in the magnificent West, with its grand expanses of outlying country, which need other than the poor cart-horse to keep communities in touch with each other.

John Farson is the new president of the American Automobile Association. He is an interesting conversationalist and he is not a "speed-mad" motorist. The Vanderbilt Cup race appeals to him because it is a contest properly guarded, but he is not over-mad on the subject of holding contests to establish records between cities, or to show off the merits of some car to some particular section at the risk of injury to somebody, followed by natural animosity to the automobile.

He had something to remark about motoring the other day, which followed the line recently taken in *Recreation* regarding the spread of the motor car in popularity. He said: "Every automobilist should realize the wonderful improvements that have been made by American manufacturers within the last

A PRACTICAL APPLICATION OF THE PLEASURE VEHICLE.

two or three years. Hundreds of Eastern automobilists probably have no idea to how great an extent the moderate-priced and serviceable small car has resulted in a friendlier feeling through the country districts of the West toward automobiles. In many sections of Illinois, Indiana and Ohio, where a short time ago there was hostile feeling in the so-called farming districts, totally different conditions now prevail. The well-to-do farmer and the man of moderate means are buying the small cars which sell from $650 to $1,500 in large numbers, and they are discovering that there are elements of usefulness in the motor car apart from the mere pleasure of driving about the country."

The greatest market for the automobile trade in the United States lies in the Western States. It is said that it is im-

A YOUNG CHAUFFEUR AND HIS GUESTS.

possible to build a car cheaper than at the present time. It is doubtful if such is the case. Motor cars will gradually lessen in price as every commodity does after the first demand.

Any discussion of motor car topics must eventually lead to the subject of good roads. They go hand in hand. Motor cars need good roads to make them most enjoyable, and motor cars are a better preservative of good roads than any vehicle which we use in America.

This year the American Automobile Association will make an earnest effort to have roads properly sign-posted throughout all sections of the United States. It is bad enough to travel over some roads, which are most improperly fitted for motoring, to say nothing of adding the possibility of losing one's way and wandering for hours through mud and over ruts which are enough to jar the mechanism of a locomotive out of plumb.

The League of American Wheelmen were pioneers in the matter of sign posts and succeeded admirably in some sections of the country in having them established. What was the result? Indifferent farmer boys, who knew the surrounding country to their own satisfaction, used many of the sign posts for targets. Their elders, instead of rebuking them, passed over the destruction of property in a nonchalant fashion, as if it were something of which to be proud.

The French farmer and the Italian farmer, though they be poor as Job's turkeys, and the English farmers, too, for that matter, are most assiduous in protecting guide posts on their roads. They tell the traveler that it is a matter of business. If Mr. So-and-So is journeying through the country, with an eye to purchasing here and there, he wants to know the proper direction, therefore it would be foolish not to preserve the sign boards at road intersections.

Would that some of our American farmers felt of the same mind, so that the belated traveler in a dark night should not be compelled to alight from his car, and retrace his steps half a mile or so to a farmhouse, there to try to ascertain which road to take at a forks which once had a guide post, but presented nothing except the shivered stump filled with buckshot that had destroyed both sign and most of the upright.

UNDER MARTIAL LAW.

Automobile Development

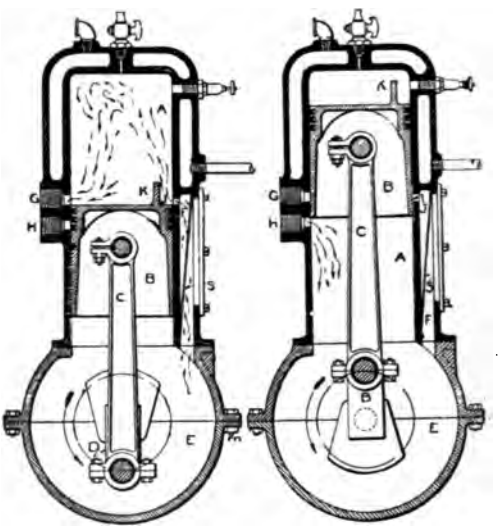
As Exemplified in the Olds Two-Cycle Two-Cylinder Car, Commonly Called the Double-Action Olds

From Motor Age.

FOR almost a year motordom has been slightly ruffled every month or so by the announcement that this or that large automobile builder has ben experimenting with two-cycle motors, but with one exception these reports have been false alarms. The Olds Motor Works, Lansing, Mich., alone has made good by bringing out a 20-25 horsepower car styled model L and generally known as the Double-Action Olds, a cognomen bestowed upon it, owing to its motor giving double the number of explosive strokes produced in a four-cyle motor of the same number of cylinders and operating at the same speed. Viewed externally, this car differs only slightly from the new four-cylinder, four-cycle Olds, model S, having a capacity for five passengers, regular touring car lines and transmitting parts in most cases practically duplicates of those used in the S model.

To readers of *Motor Talk* who are not perfectly familiar with two-cycle gasoline motors, it is timely to remark that this type of motor has an explosion in each cylinder for each revolution of the crankshaft, while four-cycle motors give only an explosion in each cylinder for every other revolution of the crankshaft. Consequently a two-cylinder two-cycle motor when running at 1,000 revolutions per minute gives as many explosions, or useful strokes, as a four-cylinder, four-cycle motor operating at the same speed. This ratio of rating is borne out by the Olds concern: The two-cylinder, two-cycle car with 5-inch bore and 5-inch stroke is rated at 20-24-horsepower and the four-cylinder, four-cycle machine with 4¼-inch bore and 4¾-inch stroke is rated at 26-28-horsepower. This rating does not give the two-cycle engine quite double that cylinder for cylinder with the four-cyle type, because the two-cycle is in an experimental state as compared with the fairly well developed four-cycle type.

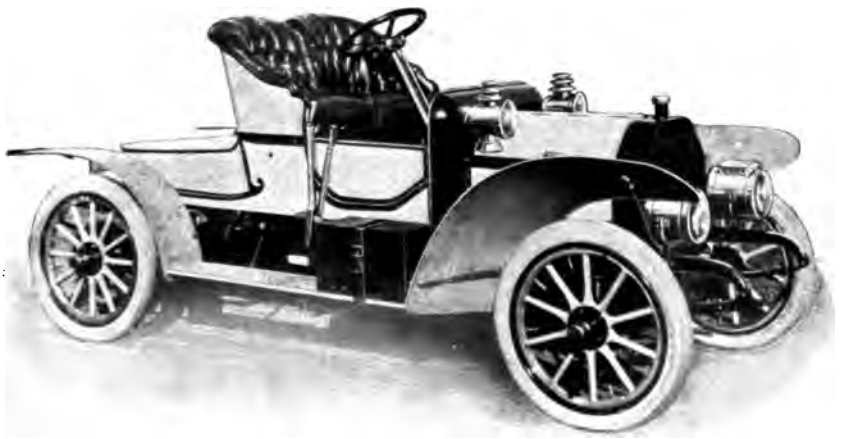
From the diagram drawing of a typical two-cycle motor given below, showing the first and second stroke, the reader can grasp the action of one cylinder in a two-cycle machine, remembering at the same time that these drawings are not made from working sections of the Olds cylinder, but are purely to show the cycle of operation in each cylinder. The arrows where shown



THE ABOVE DRAWING IS CONVENTIONAL AND DOES NOT REPRESENT A CROSS SECTION OF THE ACTUAL MOTOR.

indicate gases and the direction in which they travel. At the left is shown the piston at the commencement of the first stroke, the arrow in the crankcase indicating the direction of crankshaft revolution. The cylinder has three ports or openings in the walls, these openings taking the place of valves. They are

covered and uncovered by the piston as it rises and descends, their location being determined according to the ideas of the designer. On the left are two openings midway of the cylinder height. The upper opening is the exhaust and that below it is the inlet port through which the gases come from the carburetor and enter the crankcase. On the right side is a vertical channel in the side of the cylinder through which the gases rise from the crankcase and enter the combustion chamber above the piston. In the diagram of the first stroke the piston is at the bottom of the cylinder and both the explosion and also due to the intake port at the right being uncovered and the fresh mixture from the crankcase entering. This mixture in the crank case is compressed with the down stroke of the piston. The pressure brought up to 8 or 9 pounds per square inch is sufficient to force it up the bypass channel at the right and into the top part of the cylinder. Entering the cylinder, it is deflected towards the top of the combustion chamber, as indicated by the arrows, by a deflecting plate on the head of the piston at the right. These gases consequently are



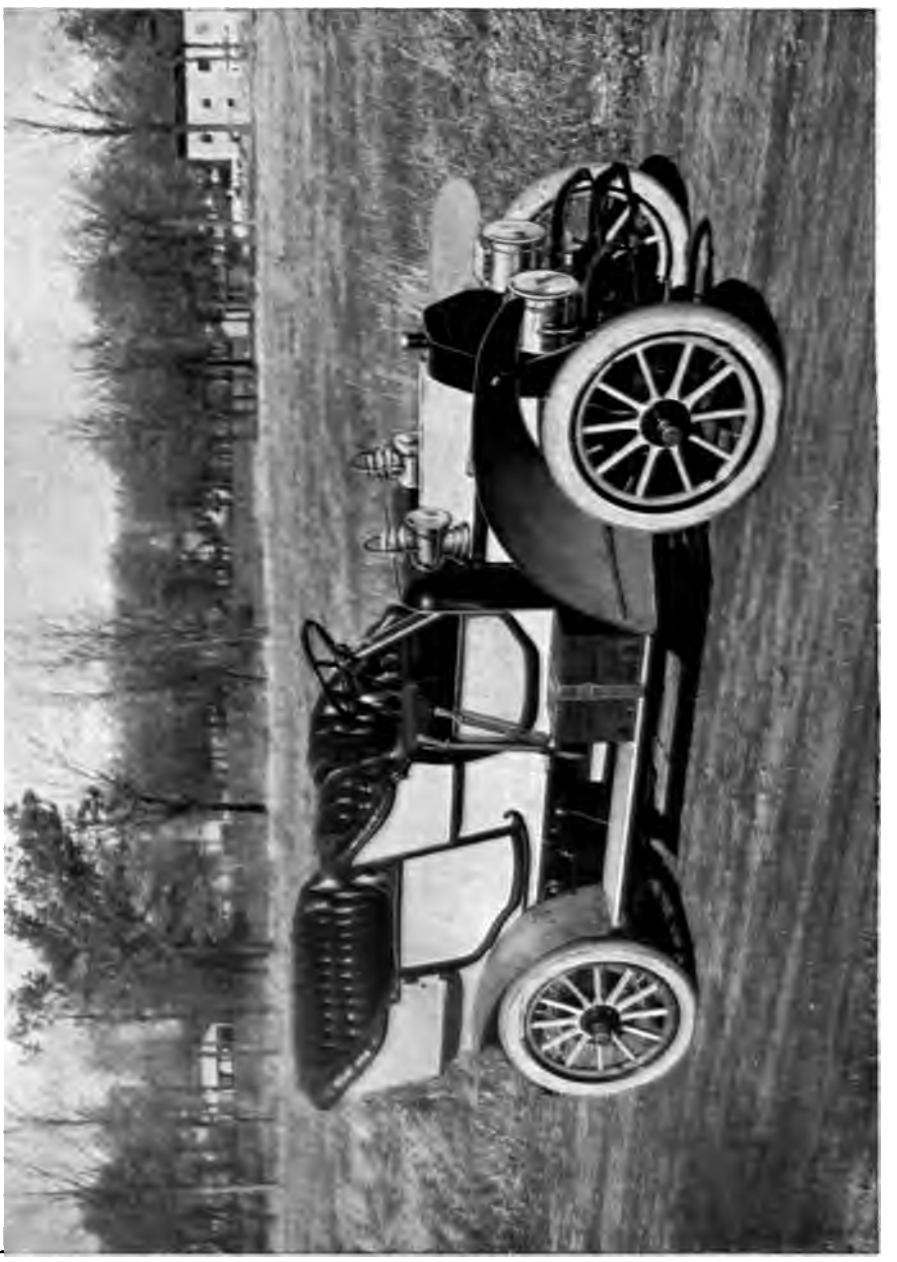
THE DOUBLE-ACTION OLDS—WITHOUT TONNEAU.

the intake and exhaust ports are open, gases passing out of the crankcase through the inlet opening and the exhaust passing out of the combustion chamber as the good mixture enters.

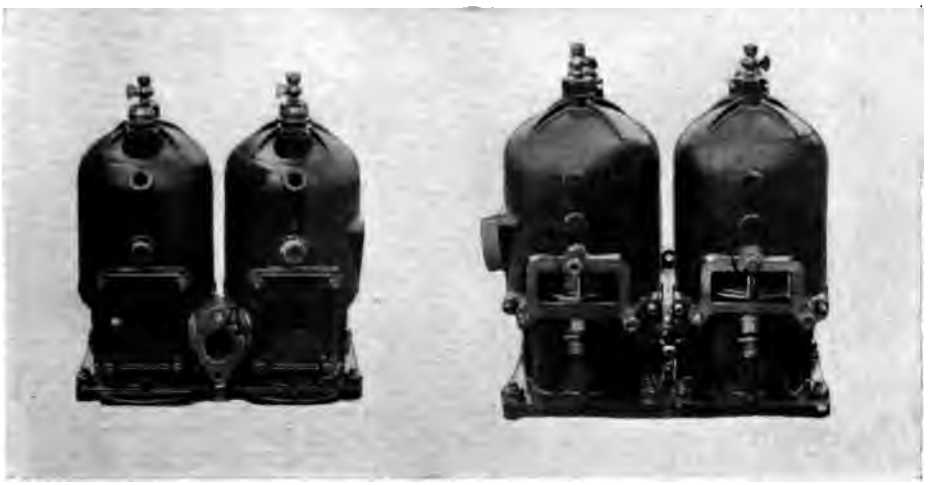
As the piston starts on its upward stroke it immediately closes the exhaust port on the left side and the intake on the right. Rising it compresses the mixture the same as in a four-cycle cylinder. As the piston rises it uncovers the lower port at the left and its suction draws gases from the carbureter into the crankcase, filling the entire case and all of the cylinder below the piston. When the piston reaches the top of the compression stroke, as shown in the illustration at the right, the spark takes place and the piston descends on the explosion stroke. Before the bottom of the stroke is reached the exhaust port at the left is uncovered and the gases rush out, partly owing to the downward force of directed around the cylinder walls, thereby aiding in expelling all of the burnt gases. There is of course a certain mixing of the inrushing mixture and the exiting exhaust which cannot be avoided. Thus is this cycle of operations completed in every revolution of the crankshaft, the piston compressing on the up stroke and drawing mixture into the crankcase—two operations—and on the down stroke imparting impetus to the crankshaft, forcing mixture out of the crankcase into the combustion chamber and exhausting—three operations.

Of the several two-cycle problems paramount, all have been carefully experimented with by the Olds concern. Designers have aimed at getting as high compression as possible in the crankcase so that on the down stroke of the piston the pressure will be sufficiently high to insure a fast rush of gas or mixture to

the cylinder and so get a full charge. At first the Olds people accomplished as high as twelve pounds compression by partly filling the space in the hollow of the piston. This of course increased the piston weight considerably and increase of piston weight is not desirable in fast running motors, as it means so much extra weight to be stopped and started 2,000 times each minute, if the crankshaft is running at 1,000 revolutions per minute. This increased weight results in pounding. In its present design the pistons have been left open as in any



THE DOUBLE-ACTION OLDS.



Inlet Side. Exhaust Side.

THE OLDS TWO-CYCLE MOTOR CYLINDERS.

four-cycle motor and the crankcase compresssion reduced to between 8 and 9 pounds, which has proven sufficient to give a full charge at the varying crankshaft speeds. This compression is gained, however, by filling the crankcase well up with counter weights attached to the crankshaft. These weights being of cast iron and being very large leave but little open space other than that required by the lower ends of the connecting rods and the throws on the crankshaft. These weights further act by balancing the shaft, the two throws of which are at 180 degrees to each other. Using the crankcase as a reservoir for storing the gases before they pass to the cylinders necessitates the making of the case in two gas-tight parts, one for each cylinder. To do this a central partition is needed, and gaskets are called into use on the crankshaft, prohibiting the gases escaping around the bearings of the shaft. Viewed with reference to the four-cycle motor, many points of simplicity call for notice. But three moving parts are needed—a revolving crankshaft, reciprocating piston and connecting rods. Valves, camshafts, cams, pushrods, and the gears needed for the camshaft are discarded, the motor externally viewed being a crankcase, cylinders and inlet and exhaust pipes.

In the illustration showing the inlet and exhaust sides of the cylinders is the inlet opening A to which the carbureter is attached and through which opening the gases enter the cylinders below the pistons and pass into the crankcase. This opening is a triangular piece fitting in the angle between the two cylinders. It shows in the vertical end section of one cylinder, marked A1. On this side of the cylinder is a pair of plates B forming the outside of the bypass channel by which the mixture passes from the crankcase to the cylinders above the piston. In the end cylinder section one of these plates appears at B1 and within it is a sloping plate B2 which aids in directing the gases into the combustion chamber, the entire passage B5 through which the gases pass from the crankcase being visible.

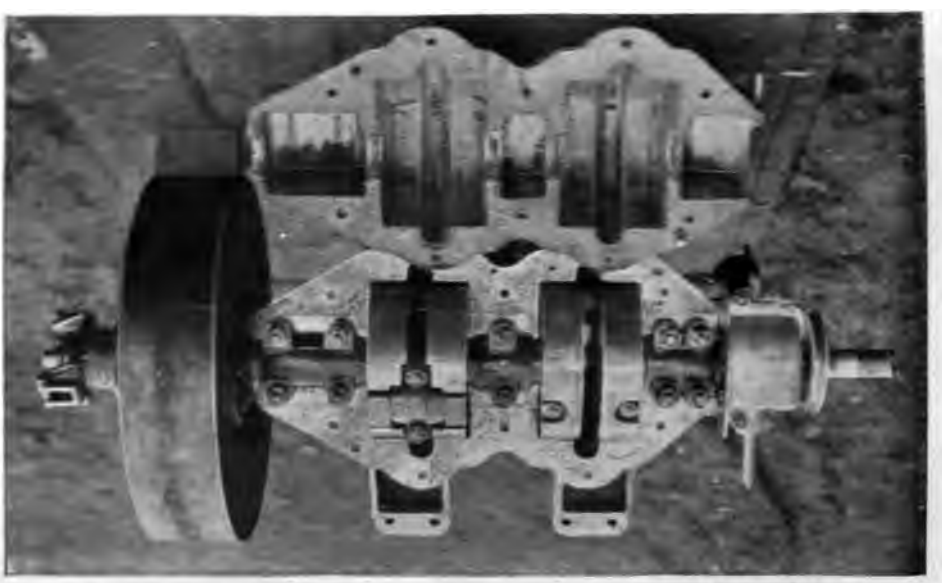
In early efforts in this motor the Olds people placed a slanting gauze partition in this channel with the hope of avoiding any crankcase explosion, the gauze being in every respect the same as a Davy or miner's safety lamp. This, however, has recently been discarded. The horizontal section of the motor gives still another view of this bypass channel B5 and in addition shows the two openings B in the cylinder wall through which the gases pass into the cylinder and also the bridge B3 separating these channels. The bridge is used to keep the piston rings in position as a continuous opening of circumferential length of the two openings B would permit of the rings slightly expanding into them as the piston reciprocates. Early designers of two-cycle motors made these inlet ports

smaller than at the present and avoided the bridge. The height of these inlet ports is not shown in any of the illustrations.

Looking next at the exhaust side of the two cylinders one sees the two timing openings C in the sides of the cylinders to which the exhaust pipes are secured. In the opening in the right cylinder are seen the two ports into the cylinders as in the inlet ports and also the central vertical bridge separating these. In the plan section the exhaust piping is marked C1, the two inlet ports out of the cylinder C2 and the separating bridge C3. These ports are, as shown in the illustration, considerably larger in circumferential measurement than the inlets and their height is slightly greater. They are located nearly the same distance from the top of the stroke as the inlet ports.

With normal running under load the crankshaft turns 1,200 revolutions per minute and the compression is from 80 to 90 pounds immediately before the explosion. The deflecting plate D on the top of the piston is carried close to the inlet side to insure the incoming mixture being directed towards the cylinder head rather than crossing the cylinder space and passing out through the exhaust port.

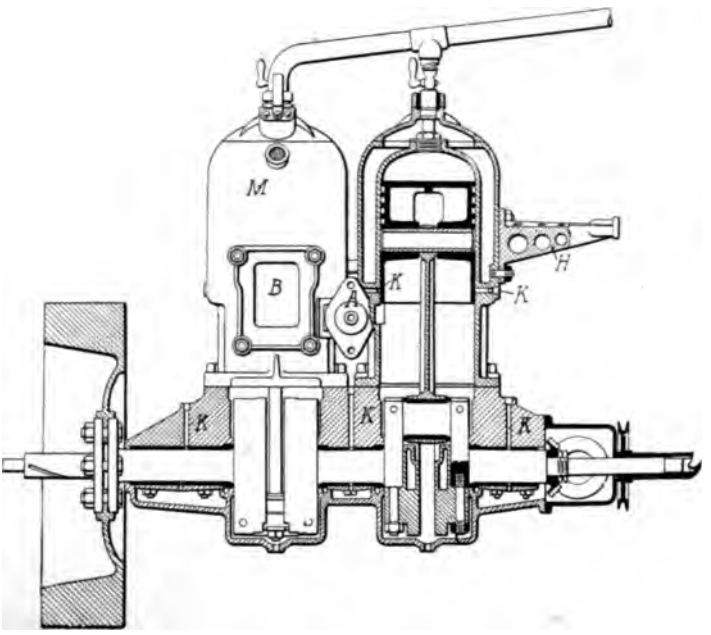
A carburetor used on a two-cycle motor of this style is considerably different from that used on a four-cycle engine. The Olds firm uses an adaptation of the Lunkman carburetor. It is of the separate float chamber type and attracts attention because of the larger air passages everywhere used, there not being one case where the passage of the air is restricted to a small pipe. Even the spraying nozzle is but the ending of a small diameter tubing in the center of the large diameter vertical mixing passage. Air enters the bottom of this passage and is throttled by a circular before it reaches the nozzle. This size the rule has an upward from exercise controlling the passage of mixture to the motor. Both air mixed and mixture a more wide together but the air there the can be adjusted to open more or less according to the throttle opening. In addition there is a spring controlled auxiliary valve in the side of the mixing chamber. This valve is simply a swinging trap door and is normally held shut by a spring. It comes into use on high crankshaft speeds when the main air passage does not supply sufficient air, or may come into operation on low motor speeds when the air valve is almost closed. Should more gasoline flow from the nozzle than is taken up by the air it is free to drop through the air passage out of the carburetor. Control of the throttle is from a lever below the steering wheel. It has been found by act-



OLDS MOTOR, SHOWING LARGE WEIGHTS ON CRANK SHAFT.—*Courtesy Motor Age.*

ually running that this type of carbureter gives good results on a two-cycle motor, affording a fairly uniform mixture under such varying conditions as slow running with heavy load and fast speeding with light load. It is carried close to the cylinders.

Cooling a two-cylinder motor requires considerably more water and air circulation than a four-cycle engine, because the explosions take place twice as often and there is double the heat generated. This condition necessitates practically 60 per cent more cooling efficiency, which has in this car been attained by making the water spaces surrounding the cylinder 11-32 inch wide and extending 6¼ inches down from the top of the stroke. Water circulation, maintained by a gear pump F on the left front of the motor, enters each water jacket immediately below the exhaust ports and leaves from the head cap E2. The disposition of the pump and commutator is novel. They are driven off the forward end of the crankshaft, the pump by a horizontal shaft F1 extending to the right and the commutator by a similar shaft G rising obliquely to the left. Both shafts are driven by bevel gears, enclosed in a suitable housing. The short motor, two cylinders, makes this disposition of these two accessories specially suitable and places them in a most accessible position. A radiator of flat vertical tubes, aided by a belt-driven fan supported on a bracket H from the forward cylinder, are the two active cooling agents.

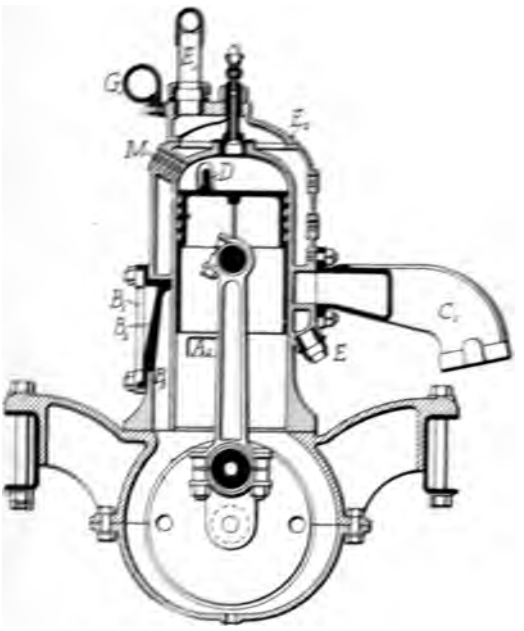


VERTICAL SIDE SECTION OF OLDS TWO-CYCLE TWO-CYLINDER MOTOR.—*Courtesy Motor Age.*

Explosions each revolution of the crankshaft calls for additional lubrication as well as cooling. To do this oil is fed into opposite sides of each cylinder through ducts K seen in the plan view of the motor. Connecting with these ducts are leads from a Hill lubricator. Similar leads supply lubricant to the three bearings of the crankshaft, these leads also being marked K, and shown in the side section of the two cylinders. Lower bearings in the connecting rods are oiled by boring the crankshaft, allowing oil from the three main bearings to pass by centrifugal force to the crank pins. The wrist pins are clamped to the connecting rods, giving them a bearing in both sides of the piston and facilitating the oiling of them,

the oil flowing into the bearings from the cylinder walls. In the crankcase is little room for an oil bath but sufficient oil is there to maintain a splash which aids in lubricating the lower portions of the cylinder walls.

Ignition by jump spark is installed. Spark plugs are threaded into the open-



SHOWING END SECTION OF OLDS TWO-CYCLE TWO-CYLINDER MOTOR.—*Courtesy Motor Age.*

ings M in the cylinderheads, giving them an angular location. The Herz commutator has been referred to. A support G on the cylinder heads carries the wires to the plugs. Spark control is from below the hand wheel. The motor is self-starting. By means of a button it is possible to short circuit the primary circuit on one point of the commutator and in that way get a half revolution of the crankshaft either forward or backward. Should it be backward the right spark in the next cylinder will be sufficient to counterbalance the back action and start the motor ahead. Dry cells furnish the current.

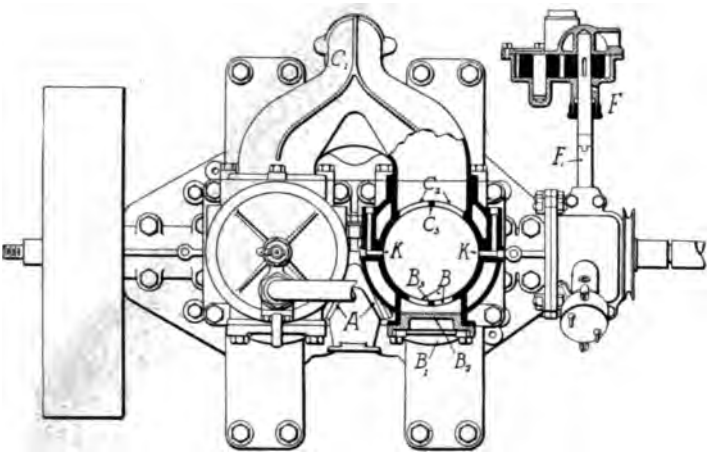
Structurally examined, the motor is conventional. The aluminum crankcase carries the bearings in the upper half and takes its support through integral teral arms. The bottom of the case is ide as small as possible to reduce crankcase capacity and is filled up internally in every possible corner. It also serves as an oil reservoir. Cylinders and pistons are of cast iron, the former machined down from the rough, ground to size and then smoothed to a finish by running the pistons in them for several hours. On each piston are four eccentric compression rings; wrist pins are hollow steel; the removable caps on the cylinder heads allow of ready inspection of the waterjackets. In the end elevation is shown how the cap is retained by a hollow screw. The hollow screw carries a priming cap, the gasoline passage being through the screws. The crankshaft is a drop steel forging subjected to a special heat treatment, and is machined, ground to size and carefully balanced; phospor bronze bearings carry the crankshaft and serve in the connecting rods and the connecting rods are drop forgings made in H section.

Transmitting power to the live rear axle requires a cone clutch fitted with a spring device to insure slow and gradual engagement. Sliding gear transmission of the selective type affords three speeds ahead, and a reverse and a jointed propellershaft connecting with the three-to-one bevel gear reduction in the back axle. Gears in the transmission are made of a high carbon steel composition and are tempered and hardened in oil.

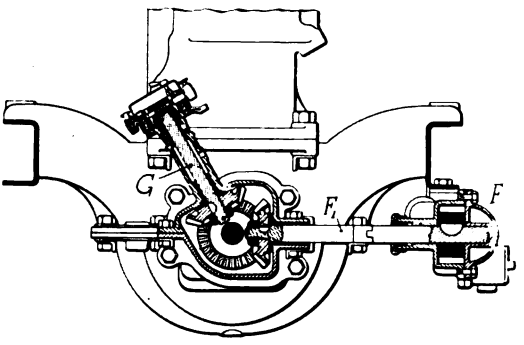
FRONT VIEW OF THE OLDS TWO-CYCLE MOTOR.—*Courtesy Motor Age.*

One lever effects all changes in speed, operating in a double slot quadrant. Within the gearcase are two sliding units. That for the direct drive and second speed is on the rear half of the mainshaft, meshing with an internal gear for direct drive. The gearset is an aluminum casing split horizontally and supported on the subframe which carries the motor. In the top is a quickly-removable inspection cap through which all of the gears can be seen. Plain bearings carry both shafts. They are lubricated by a splash system through pockets packed with waste and screens. In this way grit is excluded. Spicer dustproof universal joints are used in the propeller-shaft. On the car are three brakes. One on the transmission shaft is pedal-applied and two others, expanding within steel drums on the back wheels, are for emergencies only. They are lever-applied and when in use the clutch is automatically disengaged. The brake drums have a 2-inch face, and the shoes are provided with metal or camel's-hair lining and normally are held away from the drums by coil springs.

The running gear summed up is: Tubular front axle of 2-inch diameter and 5-16-inch wall; pressed steel channel frame pieces; subframe for motor and gearset; dustpan enclosing machinery beneath subframe; radiator supported on bracket on subframe; steering gear worm and nut mechanisms; Timken bearings throughout in the back axle; 30 by 3½-inch wheels in front and rear; 102-inch wheel base; semi-elliptic springs in front and rear 36 and 48 inches respectively, and standard steering knuckles.



PLAN SECTION OF OLDS TWO-CYCLE MOTOR SHOWING PUMP AND COMMUTATOR LOCATION.—*Courtesy Motor Age.*



END SECTION OF OLDS TWO-CYCLE MOTOR SHOWING PUMP AND COMMUTATION LOCATION.—*Courtesy Motor Age.*

INTERESTING TREE ON VANCOUVER ISLAND, B. C. CAR COULD BE BACKED INTO THIS TREE AND ENTIRELY HIDDEN.

Wants Millions for National Good Roads

From Motor Age.

Representative Hear of New York has introduced a bill appropriating $20,000,000 toward the building of good roads for the purpose of extending the postal service and lessening the interference of the agricultural and industrial interests on railroads. The plan proposed is that not more than $10,000,000 in the aggregate shall be expended in any one year. When a county road is built for a distance of 20 miles or more the government is to pay half the cost.

The good roads department of the agricultural department was severely criticized in congress this week during the consideration of the agricultural appropriation bill. When the item appropriating $500,000 to enable the secretary of agriculture to make inquiries in regard to the systems of road management throughout the United States and to furnish expert advice as to road building was reached several members sought to have the work of the department curtailed. These efforts were unavailing, however, and the item was included in the bill as it passed the house. An increase in the appropriation for next year's appropriation shows the congressional appreciation of the good work of the office of public roads bureau.

One of the chief objections to the bureau was [illegible] Indiana, who made a [illegible] right to be built [illegible]

The bill [illegible] $500,000 for experimental [illegible] betterment of the public highways [illegible] were for $50,000,000 [illegible] roads throughout the [illegible] of these United States [illegible] with no more [illegible] ex-[illegible] Stirling [illegible] to the [illegible] appropriation [illegible] that good roads [illegible] situation is the [illegible] agriculture, [illegible] the interstate [illegible] agriculture, [illegible] potent [illegible] shall prevent the [illegible] alone, but [illegible] roads that the [illegible] by all means [illegible] good roads will [illegible] for all the expense incident thereto. At this time suffice it to say that the building of good roads will do more to bring the people together in fraternal relations to promote their educational facilities and their religious work, to extend our trade and commerce of the country and add more to their happiness than anything else the government could do for them.

These sentiments were received with great applause indicating that Congressman Hear is for the good roads movement and that it will be realized.

[illegible]

[illegible]

[illegible]

The Story of a Flexibility Stunt

ls of the 75-Mile Trip of an Oldsmobile with ear Lever Locked in the High Speed Notch and Carefully Sealed the Entire Distance

From Motor Age.

EELER took his pajamas. Thereby hangs the whole story. Kipling some years back had the habi. of making a start on his stories then switching with the copy-righted remark—"but ıother story." Not so Keeler's even though this is the story of mobile Palace Touring Car, high-ed-in run to Poughkeepsie, N. Y. ırse everybody said it could not

Didn't Snutsel tell his wife to o'clock dinner ready as usual? erguson tell his wife to take a p, long planned for his first ab-ın the city, because he wouldn't that night, but would be rock-and aft, in some valley between en route with the car and its ıaking effort after effort to get n that would carry up the ap-ş side of the valley? And Clin-ɔwner—had he not promised the would be home by sundown to em the original landing place Dobbs for his ferry across the river? And, if these be true, claim to have thought Pough-vould be reached on that high ed-in?

is new among us. Maybe that for it. At any rate he counted :ens before they were hatched rary to the usual result, he cor-unted every chick. His western m, coupled with the confidence ı his car, gave his a clear vision ɔuld peer far enough ahead into e to see a successful outcome ıdventure, the very latest in the new, too. It speaks well for nality of the promotor when he ; out something no one else has r New Yorkers never let a scape to put something out of ary which will attract the atten-ıe public and gain for the enterprising one that space in the newspapers that cannot be bought for love or money. When Keeler put a snug package into the car and told the others that it contained his pajamas and that he intended sleeping in them that night and furthermore that his bed would be no other place than the hotel at the other end, everyone laughed, for Keeler was known to be afflicted with optimism, especially when it came to anything in which the Oldsmobile figured. Keeler knew himself and he knew his car.

But Keeler—only he took his pajamas. What more proof need be furnished that only he knew his car, high-gear-sealed-in and all, would land at the hotel headed for—75 miles from the start. And Keeler was right; the affidavit of the committee members on board vouches for him.

At the starting point, Fifty-first street and Broadway, New York, the gear lever was pushed into high speed position by Ferguson, who then wired it into place and next sealed the tie in the wire. This was done to the time of clicking cameras and followed by the starting of the motor. With Joe Tracy at the wheel the clutch was soft pedalled into engageemnt and at 12:25 p. m. the start was made with Keeler alongside Tracy, General Cutting back of Keeler, Snutsel next and Ferguson back of Tracy, with a full view of the gear lever and its seal. Nearing the upper end of the island Tracy turned the wheel over to Keeler and dismounted from the car and Clinton, the owner, transferred from another car with General Cutting, leaving the four aboard to complete the trip.

Crossing Kingsbridge the right and left turns were made to and through Van Cortland park to Yonkers. With throttle and pedal the passage was weaved through Yonkers into Warburton avenue. Up hill and down dale the regular route was followed, sweeping

shift [illegible] a little [illegible] merge [illegible] his [illegible] greater than the [illegible] park [illegible] inches [illegible] third point

[illegible] was reached. Here a side [illegible] taken advantage of to back [illegible] and [illegible] the angled and [illegible] hill, which was successfully made without further declutching [illegible]

[illegible] a [illegible] and in a long sandy [illegible] after that average was the [illegible] the rest. Part way up the [illegible] in the same direction was [illegible] with a [illegible] The horn having no [illegible] power to get out [illegible] over to the right, all [illegible] their shouting efforts, [illegible] the ingenuity of [illegible] in seven languages. [illegible] that every man-jack in [illegible] of the banks at the [illegible] With this the horses [illegible] unanimously Keeler [illegible] there was a situation requiring [illegible] and infinite skill. [illegible] swinging the rear end of the [illegible] to the right just as the car [illegible] through the rapidly closing gap, the [illegible] wheels on the car scraping [illegible] and spurring the ditch [illegible] in the bank in appreciable volume [illegible] place in such a twinkling [illegible] the shouting ceased [illegible] vent in the figure presented [illegible] gentlemen [illegible] the [illegible] number in the wagon and [illegible] the high banks of the road-[illegible]

[illegible] Peekskill, where a stop [illegible] for gasoline, the odometer [illegible] miles, running time 3 hours. [illegible] Peekskill a bustle, all cold, extra [illegible] was made through mistaking the [illegible] Peek right in the town. The [illegible] was picked up and followed [illegible] second creek north of Peekskill. [illegible] long there was a long, twisting [illegible] of grade ahead known as [illegible] and bearing in mind the [illegible] made, it seemed safer [illegible] be patrolled to prevent [illegible] collisions [illegible] the precaution, for around [illegible] found a herd of cows, [illegible] of the way and the course [illegible] a start was signalled and [illegible] in his clutch. Just as he [illegible] for a good rush and on [illegible] the bridge, a team coming [illegible] the bridge deliberately bored him [illegible] the right, necessitating quick work at [illegible] slowing down at the throttle and a tissue-paper space between the

Continued on Page 29

Motor Talk
A Magazine of Out Door Sports

PUBLISHED AT
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Editor's Note

We wish to take this opportunity to thank our readers for the interest displayed in sending in items and photographs, and to solicit further contributions of a similar character. If you have any photographs of interest to automobilists send them in. We can assure you they will be appreciated. We will see that they are promptly returned to you after they have been used.

Continued from Page 28.

mud guards of the automobile and the bridge railing.

With the first rush cut out another was started over the remaining flat, then up the first section of 12 per cent hill and the second section of 16 per cent, going over the brow with the speedometer registering 18 miles to the hour. This brought the car to the swing around Nelson's hill over that narrow and twisting cut-off, built as a result of the experiences on Nelson's hill during the New York-Rochester run of 1901. Just after turning into the north road east of Garrison's, a signal of distress was thrown out by the amateur driver of a cross between a runabout and a touring car stalled in the middle of the road. Ten minutes were spent with him on ignition troubles, when the clutch was once more let in on the high speed.

Up and down hill and around the hairpin turn, where Graham came to grief last fall in the economy test, and then up and down more hills, the running was kept up through Nelsonville to Fishkill, with scenery and the rhythm of the regular running motor keeping tune to one another. It was in this section of the run that the fastest time was made in the entire trip. Three miles was the distance and the time was—well, in fairness to Mills, of the New York Oldsmobile agency, the time is not here stated, because he is syndicating that performance.

Wappinger Falls was next en route, with down the hill across the bridge and sharp turn to the right. Other than a point near Ossining there is no meaner place in the New York-Albany route than that turn in Wappinger Falls. It is at the beginning of a long, decently good grade with a trolley line in the center, fairly narrow as old-time eastern roads are, and the busy street of the town, with its teams and shoppers. Down to 5 miles became necessary at the turn because of these conditions and a buggy driven on the wrong side of the street. Turning the corner slowly and declutching for that off-side play of the buggy made things look black until the throttle was opened, when faster, faster went the car until at the top of the hill the 12-mile-an-hour point was indexed on the speedometer. Soon was reached the new section of state road south of Poughkeepsie, when zip, and to the Nelson house of that town. Seventy-seven miles in 5 hours 10 minutes' running time. Then to the garage, and later Keeler to his pajamas—the only man prepared for a night away from home.

So throughout the run and until the next Sunday morning that gear lever stayed sealed into place, and every time the car was started it was done on high gear with Ferguson watching the lever and the seal. At 9:30 a. m. the seal was broken by the hotel proprietor in the presence of the two members of the technical committee of the New York Motor Club, together with many hotel guests and the usual curious ones on the street.

To one not familiar with the hill-after-hill route along the Hudson river bank and its bonnet-knocking-off-the-tail-lamp curves the performance of running on high gear all the way will fail to impress the mind with the real difficulty of the feat, to which must be added the fact that Keeler is a westerner, new to the east, and was never over the route before his successful accomplishment.

To the car the credit of having the power to perform; to Keeler the credit of driving marvelously fine under always unknown conditions before him. May his success in the Vanderbilt tryout and race be but a repetition is a sincere wish.

To Keeler and his pajamas!

FISK TIRES

SIMPLE SAFE

These tires are built particularly for those who wish to avoid all kinds of exasperating tire troubles,

WHO BELIEVE IN LIFE INSURANCE,

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OTOR TALK
MAGAZINE OF OUTDOOR SPORT
JULY, 1906

The American public is always looking for something new and expects to pay the top-notch price for same. The rule was reversed with the appearance this season of the Oldsmobile Palace Touring Car at $2250.

Take the measurement of its performance alone. From every section of the country there came the same report that the all-around work, level roads, hard roads and particularly in the mountains, our car has been the pioneer of the year. Its challenge to meet any car in the world in road efficiency tests has not been taken up. It is the car that starts from the garage and returns to it over any roads and through any roads without shifting a gear or the rider so chooses, and it is the quality which made the Oldsmobile famous as the "Road Runner" of 1906.

On the question of endurance, we point to the 100 hour non-stop run made by one of our cars in Chicago, and the 200 hour non-stop run made in Detroit.

Send for our booklet entitled "A Pair of Aces" Test Book on Automobiles," profusely illustrated with photographs and records taken from actual practice. Address Dept M.J.

OLDS MOTOR WORKS

CONE

Increase Your Horse Power

You can do it without developing a new and larger engine. Fit you wheels with

TIMKEN ROLLER BEARINGS

They remove one big element of friction, and it is friction that "eats up" power. Timkenless axles consume a lot of it.

CONE WITH ROLLERS

Horse Power, **from the standpoint of road usage,** is not all a matter of stroke and bore. One of the reasons the Oldsmobiles deliver all of their power to the rear wheels is because they use "**Timken**" Bearings throughout.

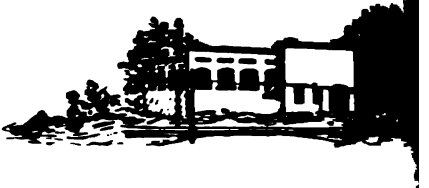
CUP

Timken Roller Bearing Axle Co.

CANTON, OHIO

A MIGHTY IMPORTANT QUESTIO

Power Plant *vs.* Distributing Station



Did you ever notice two kinds of plants in general use by electrical companies ?

The big *Power Plant* with its magnificent machinery by which the current—the power—is generated.

The *Distributing Station* with its few machines through which the current is passed and divided into lesser currents and distributed. Nothing originated here.

Advertising agencies are either Power Plants or Distributing Stations.

As Distributing Stations they simply act as machines to relieve you from the details of sending out copy and cuts.

As Power Plants they generate—originate forcible selling ideas, which not only enthuse your sales organization and give it increased strength and power, but also make prospective buyers tingle with a desire for your goods.

This agency is a **Power Plant.**

Do you want more power, more strength, more attractiveness, *more pull* in your advertising ? Take the matter up with *us.* It costs only two cents to get on our current.

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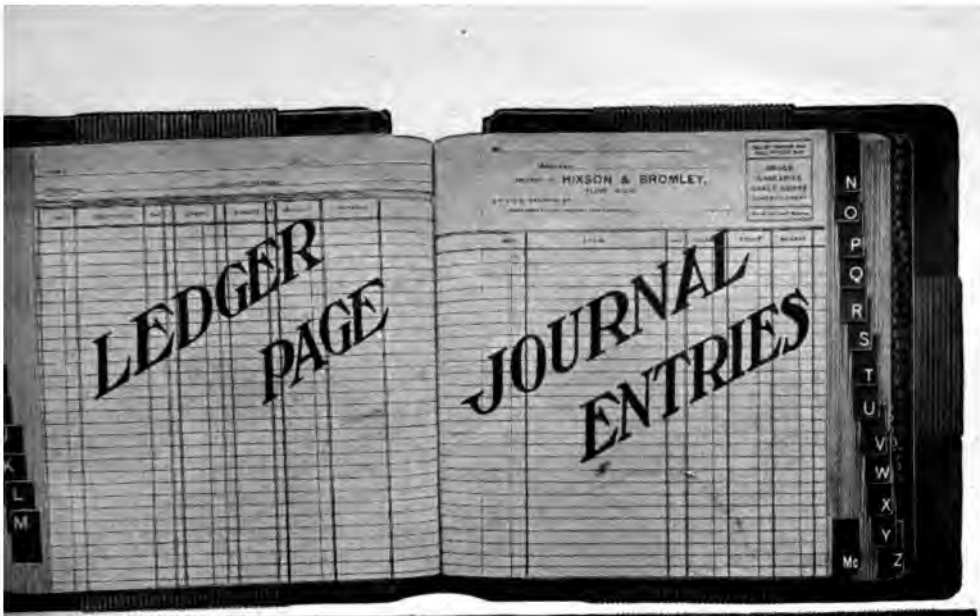

"Here-and-be"

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¶ The right hand page shows how all Journal entries are made in duplicate by means of a sheet of carbon paper—the original being torn out at the end of the month and mailed as a statement of the customer's account. The amount shown on the duplicate is then posted as a debit to the Ledger Leaf at the left, with a corresponding credit posting to the sales or merchandise account.

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100 B. H. 64 Ledger Leaves made of our famous Bond Hinge Paper	4.50
1 M Statements in duplicate, printed to your order	9.50
1 Set No. 27 Gold Embossed Alphabetical Tabs attached to plain ruled sheets	1.00
1 Carbon Holder	.25
50 Sheets Carbon Paper	1.50
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Motor Talk

A Magazine of Out Door Sports

VOL. II. JULY, 1906 No. 7

Planning an Automobile Vacation

William H. Clarke Tells Where to Go, What to Carry and How to Pack the Luggage in the Machine

From Suburban Life

IN general, the success or failure of an automobile vacation trip, as marked by the pleasure and healthful recreation which it gives, will depend in a large measure upon the equipment and provisioning of the party. Even the problem, where to go, becomes almost secondary to that of what to carry, for no trip can be wholly delightful if some of the creature comforts which have become most essential in these modern days are missing.

In stocking up for a trip, the average amateur motorist will get together about five times as many things as room can be found for in his machine. He will, by the process of elimination, eventually accommodate his luggage to the size of his storage capacity, but, unless he has had some experience in such matters, the chances are that he will forget some of the essentials and include many of the non-essentials.

Consider first the matter of dress. There is sure to be an endless amount of dust, and very likely more or less rain and mud, so that an expensive costume is out of the question. The most comfortable outside garment for either man or woman is the linen coat, which can be purchased as low as three dollars and a half. The indications are that linen will be worn more than any other material during the coming season, although many coats for ladies are shown in pongee, mohairs, glorias, summer silks and khaki cloth. A sensible fashion calls for light colors. Both men and women are wearing visor caps, which fit tightly on the head and are made either of cloth or leather. These caps cost from a dollar and a half upward. The ladies ought to be provided with several veils, so that they can make a change at least every other day, for in the summer a veil catches and holds so much dust that in a short time it becomes a menace to health. Automobile veils are looped at one end about a ring, while the other end is divided, so that when properly adjusted they hold the cap in place. The ladies seem to find something fascinating in the big gauntlet leather gloves, but long before the trip is over they are likely to be discarded for gloves of lighter and cooler material.

The effect on the eyes when goggles are worn all the time is bad, but every member of the party ought to have a pair, as there will be occasions when they will be needed. Goggles of too low price are not a good investment, because of the poor quality of the glass, but one dollar and a half will buy a good pair.

Every member of the party ought to be provided with a traveling robe and one or

two pneumatic cushions; call them luxuries, if you will, but on a long trip, where many miles are made each day, they soon become almost necessities; for in a roomy, easy-riding machine the traveler may sleep comfortably for hours at a time when he or she is wrapped in a robe and has two or three pillows tucked in at just the right spot. Indeed, it is not an unbearable hardship to spend a night in an automobile under such conditions, and on a long vacation trip through an unknown territory one must be prepared to do this. The best form of robe is made of plush, interlined with rubber and costing from four to six dollars. Such a robe is both warm and water-proof.

In this connection, it should be said that every wise motor-car tourist will never fail to take along his tarpaulin. When it becomes necessary to spend a night out of doors, the tarpaulin will protect the occupant of the car from the dampness of the night air. If the members of the party prepare their own meals en route (and really that is the only way to do, if the trip is to be a real success, for it gives just enough of a feeling that one is roughing it to add spice to the experience), they will find the tarpaulin of good value in preparing the meals. When it is spread out smoothly on the ground and the tablecloth spread over it, it present a hard surface, almost as good as the regulation dinning-table. The tarpaulin may be rolled up compactly, and will occupy but little space when stored away in the bottom of the machine.

The question of the amount of stores which can be carried will, of course, depend largely upon the variety and style of the machine. Most of the cars made with rear entrances have a wicker basket on each side, while commodious trunks can be purchased, which can be attached to the back of nearly all of the machines which have side entrances, a different style of trunk being made for each make of car. Some of the well-known machines have recesses under the rear seat, which will hold a considerable amount of supplies.

When the members of the party are to dine by the wayside, they will find the automobile luncheon kits, costing all the way from fifteen dollars up, of great convenience. These kits have wicker or leather cases, and contain compartments in which are placed plates, glasses, bottles, pepper and salt servers, cork-screws, knives and forks and spoons, and tight receptacles for food. The tourist must be sure, however, to add a can-opener to this array of dining essentials. Kits like the one described are so arranged that it is almost impossible for breakage to occur; but while they are a great convenience, they are by no means indispensible, for it is not a difficult matter to arrange a box with compartments made of leather, rubber or some other soft material, which will hold the dishes safely.

If the members of the party are not too fastidious, and if they dislike to burden themselves with the task of washing dishes, they can carry along a supply of wooden or paper plates, to be discarded after each meal.

A campfire is pleasant to read about and is cheerful enough after the sun goes down, but your experienced tourist knows the value of a small, compact chafing-dish, or some similar contrivance which burns alcohol, for preparing his meals. This, with the food supply and table necessities, may be packed away in a trunk, the side basket or in a compartment under the seat. The food supply should be kept in what-ever receptacle is the nearest to being dust-proof. Perhaps no better or more convenient place will be found than a dress-suit case, and one or two may be carried in a good-sized car.

If one is to be contiually passing through villages, so that the larder may be replenished at frequent intervals, it is best to take sufficient food supply only for a day or two at a time.

If sandwiches are secured at a hotel or farm-house in the morning and put away wrapped in a damp cloth or in oiled paper, they will still be fresh and moist at noonday and will have a better flavor even than when first made. As a rule, it is not well to carry bread for any length of time, as it soon becomes dry and unpalatable. Crackers of several kinds in sealed packages are far better and afford a pleasant variety. Butter will keep for severl days, if carried in a tightly closed jar. Condensed cream may be carried easily, and salt, pepper and sugar must not be forgotten. Of course, it will be necessary to rely upon canned goods more or less on a long trip.

Several bottles should be taken along for holding water, as it is not always safe to drink from springs and running brooks. The bottles may be filled at frequent intervals at farmhouses along the road. Each member of the party should be provided with a sanitary or collapsible drinking-cup.

Of course, it will be necessary to carry a certain number of toilet articles, especially if there are ladies in the party. After a long ride facing the hard wind, even the masculine members of the party will not hesitate to make use of the contents of the cold-cream jar. A looking-glass should

not be forgotten, and a wash-basin of some sort should be included.

In selecting a route for the vacation trip in a motor-car, the question of roads naturally becomes or great importance; but no trip will be entirely successful if too much emphasis is placed upon this matter, for some of the most beautiful bits of country can be reached only by traveling over roads which are far from being first-class.

A favorite trip from New York is along the Hudson to Albany and then through the Mohawk Valley to Rochester, Buffalo and Niagara Falls. On this trip, every night can be spent at a hotel, if desired, and there will be little occasion for roughing it. The trip can be taken very comfortably in a week, allowing an abundance of time for sightseeing.

Another pleasant trip, starting from New York, lies along the Hudson River to Troy, and from there to Saratoga, and then to Lake George and various points in the heart of the Adirondacks. This is a beautiful trip for people who are fond of the woods and nature life in general.

A popular short run from Boston is to the Berkshire Hills in western Massachusetts, stopping at Lenox and Pittsfield. State roads are used most of the way, but considerable hill-climbing will be encountered when the Berkshires are reached.

Motor-car enthusiasts from all over the country flock to the White Mountains every season. A two or three days' run from Boston will take the tourist from Boston into the heart of the mountains, by easy stages. If the route which passes through Lowell, Manchester and up the Merrimac Valley is followed, much charming scenery will be found. The town of Littleton is a good place to stop and prepare for the trip over the mountain roads.

Philadelphia motorists are enthusiastic over a week's trip through the Susquehanna Valley, which is rich in beautiful scenery and the charm of serene country life.

The Detroit tourist finds his thoughts wandering across the border and up into the Canadian wilderness. Here is a splendid trip for those who are willing to rough it a little. The route leads first to Toronto, from there two hundred and fifty miles back into the depths of the forest primeval.

Such trips as these, of course, are purely suggestive. Many tourists make through trips from Chicago to New York. Others who are not dismayed by tales of Maine roads will find some beautiful trips through that state, while Virginia and the Carolinas have much to attract the motor-car tourist.

ANOTHER PRACTICAL USE OF THE PLEASURE VEHICLE

THE INVENTOR OF THE DRAG, MR. KING, DEMONSTRATING HOW TO USE IT

Good Roads for $10.00 a Mile

Claude H. Miller Gives Additional Information on the King Split Log Drag

From Farming

TEN years ago, a Missouri farmer who had grown tired of wading through a "slough of despond" every spring when the roads were soft and who had seen his neighbors lose time, money and patience when their wagons were hub deep in the mire or their horses tugging and straining in their harness to get a half load to market, decided that there must be some remedy for this condition. One day in thinking it over he made the astonishing discovery that what made the roads muddy was mud, and that if the road was worked into such shape that the water would run off instead of soaking into the ground after every rain the roads would cease to be muddy. He wisely refrained from talking about what he had discovered, because he knew that you had "to show" a Missouri man, there was no use telling him. So he proceeded to show them.

He rigged up a home-made contrivance out of an old wooden pump stock that the frost had spoiled and an oak post. By means of three pieces of fence board he nailed these together so that they were held parallel to each other. Then he made a rough plank platform on which to stand and by means of wire hitched his team to this clumsy affair at such a point that it would drag along over the road with a slant of about 45 degrees.

He began with the road that ran in front of his own farm. When it was at its worst he drove up and down, from his own front gate to that of his nearest neighbor. Like a huge mason's trowel smoothing off motar, it scraped along cutting down the inequalities and rough places and filling up the wagon ruts. He kept at it and after a number of draggings, in place of the flat basin that had served as a water course for every storm to settle in, he had built up a road with a crown and surface that was smooth enough to shed water "like a duck's back." In short he simply demonstrated the soundness of his major premise, "if I can get rid of the mud the roads will cease to be muddy." The device he made he called a "split log road drag."

Even after having perfected the road drag the reason that it worked this wonder was not entirely clear to its inventor until he received inspiration from observing a hog wallow. He says: "One day I noticed that water was standing in one of these wallows long after the ground all about it had become dry. Probably I had many times before observed this fact, but not until now had it occurred to me to inquire into its cause. Examining the edges of the wallow, I was impressed with the fact

that it was almost as hard as a piece of earthenware. Clearly this was because the wallowing of the hogs had mixed or "puddled' the earth and the water together, forming a kind of cement which dried into a hard and practically water-proof surface."

The man who had by such simple means worked such wonders with his road was Mr. D. Ward King, of Maitland, Missouri. His idea was soon taken up by the Missouri State Board of Agriculture, and an active campaign was started for better roads through Missouri. Co-operation was soon secured from the railroads running through the great corn belt section. The result is that to-day Mr. King is traveling throughout the states of Iowa, Kansas and Missouri, in fact all through the Middle West section on special trains in company with college professors and railroad officials preaching the gospel of good roads and showing farmers how to make a road drag and use it. Villages and townships, citizens and neighbors are forgetting their traditional differences of opinion and becoming "soldiers of the common good" in making better roads. The Atchison, the Chicago and Alton, the Burlington, and in fact all the great granger railroads are running special "good roads without money" trains giving demonstrations of the King idea of good dragging, and encourging the organization of Good Roads Associations in the communities through which they pass.

Governor Albert B. Cummings of Iowa last year issued a call for a convention to meet and discuss the subject of Good Roads. In it he says "When a road is properly drained and graded, the King Drag if used in the proper way and at the proper time will make an excellent road."

In sections where it has been tried the testimony is all in its favor. One man says "We put the drag right into a muddy road where wagons were sinking up to hubs, and just four hours after beginning to use it, wagons loaded with two tons of baled hay were being drawn over this road without making a perceptible rut." This statement is not the result of one man's opinion only, but can be substantiated by a score of witnesses. Hundreds of miles of Middle West earth roads in a similar condition are being made good by applying the "road dragging" idea to them.

The cost of making and operating the drag is so small, and the idea that is embodied in it is so simple that the wonder of it is that its application has not already become universal. Roads can be worked up into an excellent condition and maintained at a cost of from three to ten dollars a mile. The dragging accomplishes a number of useful things. The most important one is that by giving it a smooth surface and a rounding shape, it makes it possible for the road to shed water instead of absorbing it. Then too, it kills the weeds and takes out the bumps at the sides of the culverts. It also destroys the old trail and thus prevents deep ruts being formed. The time to use the drag and the manner of its use are both very important. Until a road has been worked into some sort of a shape, the first dragging should be done when it is very wet or when it is thawed on top during the early spring. After that the time to drag is after a rain storm or wet spell when it begins to dry out.

The perfect earth road must have three attributes and all three can be acquired by the intelligent use of the Split Log Road Drag. It must be at the same time oval, hard and smooth. Then it is in a condition to shed water instead of soaking it up. Strange as it may seem, the worse the road material, the better the road becomes when the drag is used. Clay for instance, which when throughly water-soaked makes a terrible road, by dragging is molded and tamped into a form that bakes on the surface and, no longer absorbing the water, makes the best kind of a dirt road.

The time when the most effective work can be done, is early in the spring. Most farmers have the time then, because the fields are too wet to work and the horses are idle in the barn. The best way for a community to use the road drag is to form a "good roads club" of some kind, and appoint one of the members to do the dragging.

The Kansas Good Roads Associations published a circular in which a method of organization is outlined. They say: "Any public spirited farmer or villager may circulate a paper stating that all those persons living on a certain road or village street will pay two or three dollars a year to have their roads kept in order with a drag. It will be possible to accomplish wonderful results."

When a fair proportion have signed, these persons will appoint an overseer or committee for the work in their neighborhood from whom they select a resident secretary. [illegible] a drag [illegible] the latter [illegible] about twenty-five cents per hour. [illegible] expected to repair a certain piece of road extending from town to the farthest [illegible] part. Using a round [illegible] with the drag they ride or drive over the road soon after each rain. This [illegible] keeps down the dust and keeps the road in excellent condition at a cost of less than $10 per mile. To meet

this amount, each member subscribes and pays to the Secretary-Treasurer his share of the assessment, from which fund the drag has been built and the "Drag Master" paid. Those living beyond the district that this club includes soon see the advantages of this systematic dragging of the natural road and form other clubs from three to five miles farther on, and so on until the whole section is covered with a network of good, well drained, earth roads.

HOW TO BUILD THE DRAG

After several years trail, it has been developed that the best kind of a drag is made by splitting a log and placing the pieces about thirty inches apart, with the flat sides both facing in the same direction and pinning them together. The kind of wood used is not vitally important, any kind of light timber wil do. It is better not to use oak. Mr. King says that the best split log drag he ever used was made of red elm. The lower edge of the front piece should be protected with iron and a wagon tire will answer for this purpose. The log should be ten or twelve inches thick and perhaps nine feet long. A chain or heavy wire is fastened three or four inches from the right hand side and about half way up. It is then carried to the front till it is about two feet away from the drag, then to the left and over the top of the front slab and fastened around the cross bar. The team should be hitched so that the drag will move the dirt to the centre of the road. The importance of hitching up properly cannot be over-estimated as it is only second in importance to the time at which the dragging is done. The road should be dragged after every wet spell because a smooth surface is thus produced. But that is not the object of dragging. Its object is to put the road into

READY FOR THE START ON THE NEW YORK TO POUGHKEEPSIE RUN
KEELER AT THE WHEEL

such a shape that it will shed the next rain instead of absorbing it.

There are several things to be remembered in operating the drag. It is certainly not a plaything for children, and they should not be allowed to ride on it any more than they should on a harrow. If the drag should strike a rock, the result would probably be a serious fall. It does not pay to plow a road before dragging, because that makes the foundation too soft. However deep the ruts may be if you keep at them with a drag they will soon disappear. By hauling the drag in a slanting position, the dirt can be easily dragged to the middle of the road. In the case of narrow roads, first drag the wheel tracks. After three or four rains plow a shallow furrow just outside the part that has just been dragged and spread this over the road. Only plow one furrow. After the next rain if necessary you can plow another. At each plowing you widen the road bed two feet. If the earth is pushed to the middle of the road continually the road will drain itself.

It is not absolutely necessary to make the drag out of split logs. It can be made out of plank, but it is not so satisfactory as it is less rigid than a log. A drag should be hauled at an angle of about 45 degrees. This is not absolute however, but depends on the judgment of the man dragging the road. If the drag dodges around the earth which you are moving it is because it is overloaded. The secret of success in road dragging is to do a little at a time and to do it often. It is peculiarly adapted to clay and gumbo soils so prevalent in the West. In the case of sand roads a different method must usually be adopted. There are several ways of making a sand road better which however do not come within the province of this article, either by keeping it wet, by hauling clay on it or by sprinkling it with crude oil. In the case of rocky roads the drag does not possess such great value as rocks of course would interfere with its action. For these reasons its application in the Eastern States is limited and each case will have to be decided on its own merits.

Mr. King says it will help any soil road, rocks or no rocks. In New York State and Pennsylvania considerable effort is being made to encourage the use of the road drag where it is practicable. Circulars are being issued describing its construction and the method of its use, and the newspapers in many sections are urging its adoption.

The difficulty that is experienced is in overcoming prejudice against this method of making roads. It seems inconceivable that any method so simple and so cheap could be devised to make turnpikes. We have been so used to having our macadam roads cost us from three to eight thousand dollars a mile that any suggestion that we can have roads that will answer all practical purposes at a cost not to exceed $10.00 a mile is too Utopian to be generally accepted.

In view of what has been accomplished in certain sections by the split log drag, it is certainly the duty of every farmer to determine whether it can be used in his section, and if so, try to get the Road Supervisor or whoever is in charge of the road work to try it. If this is not practical, the other solution is to form a good road club, and to get work started by popular subscriptions.

Dont's That Will Prevent Accidents

From Outing

Don't allow your chauffeur to drink liquor while in charge of your car. If running your own car avoid rum yourself.

Don't run on the wrong side of the road except at narrow, intersecting streets.

Don't try to see how close you can run to pedestrians. Give them even more room than they require. Many walkers have heart trouble.

Don't take any kind of a turn or curve at twenty miles an hour; better go four miles and be able to do it again.

Don't put oil on your registration number and throw dust on it. An honest man isn't afraid of identification.

Don't toot your horn in passing horses unless approached from behind, and then not unless absolutely necessary. There still are some spirited animals.

Don't blow your Gabriel horn continually in a city street. A little of it is music; too much is a disagreeable, irritating racket.

Don't forget to light your lamps one hour before sunset; then you will have more chance than the wagon ahead without lights—and be within the law.

Don't grab at the things that concern the chauffieur and don't ever take a passenger again who has grabbed once—if you ever are able to go out again.

Don't run away after running down anybody; you'll stand a better chance if you stay.

Don't ever act like anything but an intelligent gentleman.

ON A MEXICAN HACIENDA—PLAYING "HIDE AND SEEK."

A Commercial Garage

The Building, Equipment and Maintenance of Same—by Fay L. Faurote

From Horseless Age

TO a company which has been formed for the purpose of handling the delivery work of a number of concerns in a large city the question of the construction and equipment of a garage is a most important matter. There are several things which should be taken into consideration. First, the location of the garage; second, the material of which the building is to be constructed; third, fire protection;fourth, lighting; fifth, heating; sixth, ventilation; seventh, drainage. Owing to the fact that the commercial vehicle business is still in its infancy, many of these features have not as yet had careful consideration, and it is therefore with a view toward furnishing some suggestions to those intending to engage in this business that this article is submitted for the consideration of the readers of this magazine.

LOCATION OF BUILDING.

Anent the selection of a building, it may be said that it is very seldom possible to remodel an old building in such a manner as to make it entirely satisfactory. The problems of lighting, ventilation, drainage and floor construction are very difficult to solve, and nearly everyone who has tried to utilize an old building has found that it is practically impossible—the remodeling costing almost as much as a new building. All of the up-to-date garages are being constructed almost entirely of brick, concrete and steel, all of which are fireproof and easy to keep clean and painted.

The location of the garage should be determined by three things namely: First, amount spent for rental or taxes; second, proximity to customers; third, fire protection.

LAYOUT OF BUILDING.

Having determined the location and form of construction for the building, the questions of shape and dimensions are next to be considered. In the case of the garage shown in the illustration, the size and shape of the floor space are so figured that a runway is provided along both walls and the center of the floor is reserved for the distributing tables and distributing cars; that is, it was planned so that cars coming from the various firms of the city could deliver the packages onto the main distributing tagles, and then, after passing around for their regular supply of gasoline and oil, could be driven out again without reversing or interfering in any way with the work which was being carried out on the floor. If you will refer to the drawing you will see that this arrangement works out very nicely, making it possible for eight or a dozen wagons to load or unload in an extremely short time, without interfering with the others in any way whatever.

The length of this particular building is 185 feet, width 60 feet. The structure, with the exception of 90 feet in front, is one story, provided with regular steel roof and skylight so often used in factory construction. The front part of the building was made two stories high in order to provide for a repair shop and stock room.

Another point which may be mentioned in this connection is the fact that whenever possibe posts used for supporting the roof should be avoided, and a steel truss construction used instead. In the front part of the building the latter construction has been used, while in the rear you will notice the former.

The location of the posts, however, is such that, in this case, they do not materially interfere with the moving of the cars.

DRAINING.

The floor should be of concrete, and so made that any water which may drop on to its surface will flow toward the centre or toward the wall, according to the system of drainage used. In the garage under consideration the floor is slanted so that the water flows toward the centre, and is drained out through holes in the concrete. Each outlet is provided with a small iron plate drilled full of holes, which, while they are large enough to allow the water to run through, will not permit the drawing in of waste and paper which may have collected on the floor.

Large galvanived iron pans should be

A VIEW IN THE COMMERCIAL VEHICLE GARAGE—Courtesy *Horseless Age*

provided, which can be placed under the cars to collect any oil which may drip out of the bearings. This, many times, will save a concern considerable money, because much of the oil, if run through an oil filter, may be used over again.

Suitable water connections should be provided along the floor, and sufficient pressure maintained in the mains so that the floors may be flushed easily and quickly.

LIGHTING SYSTEM.

The lighting of a garage, especially at night, is a difficult proposition, owing to the fact that insurance companies will not allow the use of what they term "an open flame light." Electric arc lights of the ordinary form and gas lights come under this head, and therefore their use has been prohibited. Some form of enclosed electric light, such as the incandescent, must be used. Sixty lights of the incandescent variety are used in the garage which has been described. In addition to this several extension cords are provided which allow the lights to be transferred from one position to another, as is often necessary when working around and underneath the cars.

During the day the whole garage is, of course, lighted through the windows in the side wall and skylight.

HEATING SYSTEM.

Two methods of heating have been found to be very satisfactory in garage practice. One is the hot air system; air being heated by passing over a set of steam coils, and finally distributed into the various parts of the room by means of large tin pipes. The circulation is forced by means of a blast fan driven by an electric motor. The second system, and the one which is more commonly used, is the regular form of steam heating. A number of pipes are strung around the walls of the garage and steam from a steam boiler is circulated through them. When this system is used it is advisable to place the pipes some five or six feet from the floor, in order to keep them out of the way and prevent the rubber tires of the cars from coming in contact with them.

The question of ventilation is a very important one, for the reason that the suffocating gases which are produced by im-

perfect combustion of gasoline are very disagreeable to breathe, and many times cause severe headaches and sometimes unconsciousness. During the winter it is a very hard matter to keep the air in a garage pure and at a comfortable point. Exhaust fans, driven by electric motors, are used, but even they are rather unsatisfactory. Air chutes, similar to those used in blacksmith shops, are also sometimes provided. They are fairly satisfactory, but tend to increase the heating expense to an alarming extent. Whenever a machine is run for some time indoors it is always a good policy to connect the outlet pipe of the muffler to a pipe running to the outside of the building, thereby doing away with a large amount of gas which would otherwise be forced out into the room.

Probably of no less importance is the arrangement made for storing gasoline and oil. Insurance companies are very strict as to the handling of gasoline, and it is therefore nearly always good policy to equip your garage with a gasoline storage system which meets with their approval. In the writer's opinion, the most satisfactory one of these is an hydraulic system, shown in the photograph. In this system the tank is always filled with water and gasoline, the former, owing to its density, occupying the lower part of the tank and the latter the upper. As the gasoline is forced out, the space in the tank is filled with water, thus allowing no air spaces to form, the vapor in which might cause an explosion. When the tank is refilled the reverse operation takes place, but at no time in the emptying or filling is there a chance for any appreciable amount of gasoline vapor to accumulate in any portion of the tank. Furthermore, the whole apparatus, except the filling and delivery pipes, may be buried underground, thereby making doubly sure that no conflagration can take place.

For the storage of lubricating oil any of the self measuring cabinet tanks will be found satisfactory. The tank shown in the illustration holds 64 gallons, and the gasoline tank 250 gallons.

FIRE PROTECTION.

A proper fire protection equipment is ab-

METHOD OF COLLECTING AND DELIVERING ACCORDING TO ROUTES
Courtesy *Horseless Age*

solutely essential. Numerous fire extinguishers are on the market, but the regular chemical extinguishers which generate carbonic acid gas have been found to be most efficient. In addition to these there should be hung at various places about the room pails of wet sand. A gasoline fire is very hard to put out with water, and therefore at the beginning of a conflagration the chemicals and sand should be used. Many buildings are equipped with a sprinkling system, which is so laid out as to cover the entire floor space. The various nozzles are sealed with a metal which melts at a rather low temperture, consequently the apparatus works automatically, and as soon as the fire attains such proportions as to heat the air of the room to this melting point the whole floor and objects upon it will be flooded.

PIT AND WASHING DECK

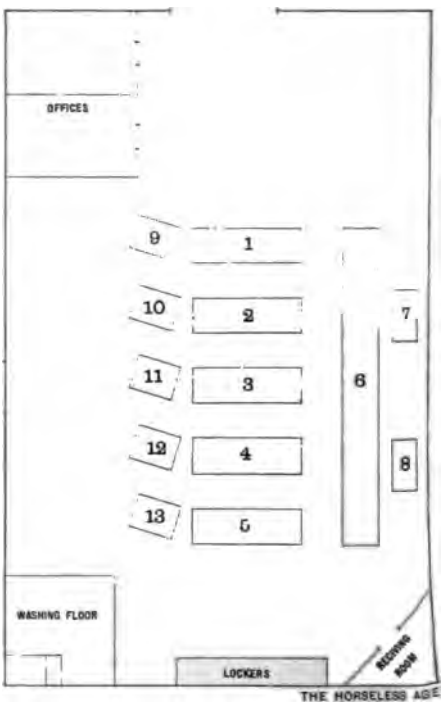
The balance of the equipment of the garage varies according to the number of wagons being used, and the amount of money which the company is willing to spend in repair shop machinery and tools. In order to take care of the business prop- A provision may be made for doing light building a pit in the floor, over which the repair work in one corner of the garage by machine may be run for occasional adjustment. The proper size for a pit is about 4 feet wide by 4 feet deep by 8 or 10 feet long, the length, of course, depending upon the wheel base of the cars being used.

Another part if the repair shop which may well be left on the garage floor is the washing deck. If the floor is made entirely of concrete it will be an easy matter, by sloping a portion of the floor so that it will drain easily and quickly to one point, to locate the washing deck in one corner of the garage. Various forms of washing devices may be obtained, some having a swivel joint in the piping, making it possible to carry the hose around the entire car without kinking it. This form has proved very satisfactory, as it does not wear out easily.

REPAIR DEPARTMENT.

The repair department proper should be located on another floor, independent of the garage floor proper, and it is therefore necessary to provide some sort of runway or elevator by means of which the car may be transferred from the ground floor to the repair shop. If an inexpensive equipment is desired a stairway, fitted with board treads on the side and block and tackle at the top, may be utilized, but if possible an elevator should be installed, especially if the building is of more than two stories.

The machinery for the repair shop should be well selected and should be complete enough so that practically any part of the motor vehicle may be repaired in the garage. A fair sized drill press, a shaper or planer, a milling machine, and a set of buffing and emery wheels will answer the purpose as far as machine tools are con-



FLOOR PLAN OF GARAGE

1–5 Sorting Tables; 6 Main Distributing Table; 7 and 8 Cars Unloading; 9–13 Cars Loading

cerned. A blacksmith's forge, anvil and set of tools is another part of the shop which is almost indispensable. The rest of the outfit will vary, but a portable crane, a few "turntable" rollers, an electric drill, a small air compressor, with its accompanying storage tank, a portable buffing machine, driven by an electric motor, a battery charging outfit, a soldering outfit, tire testing tank, a number of galvanized iron waste cans, and a complete set of tools, such as hammers, wrenches, chisels, drills, etc., will be found almost indispensable.

Situated in one corner of the repair shop should be a stockroom fitted with various bins and pigeonholes, in which the various repair parts for the machines may be kept.

It is very often necessary in a large gar-

age to keep a man in the building all night, either to wait on customers or to make some very early trips. In this case it is good policy to provide a room for him in some portion of the shop where he can be easily called. A room of this kind is provided in the garage described, and is used by one of the drivers who is obliged to make a very early trip in the morning. The work is being done for the government under contract, and so, in order to make sure that the car will always go out on time, the company adopted this plan. The man is always there ready for business, and a trip has never been missed.

RULES OF THE BUSINESS.

The maintenance of an efficient delivery service is a very hard proposition, owing to the fact that everything has to be done exactly according to the schedule. Each man is required to report on time, punch his number on the time clock, and report for duty, with his wagon properly cleaned, filled and ready for business. The management does everything possible to facilitate the work, and everything in the garage is kept in the best possibe condition. The walls are painted regularly with a cold water paint by means of a large force pump, and everything is done to keep the room light and well ventilated.

Each man is held responsible for his car, and, in addition to this, he is required to keep and turn in every day complete records of the amount of gasolene and lubricating oil used, number of stops and trips made, and any other data which would be of assistance to the management.

Complete records are kept of each car's performance, and from these data bids are made for the business of the various merchants of the city. As the commercial end of the automobile business is as yet almost undeveloped, there are any number of opportunities to get business, and it will only be a question of a few years before the numerous obstacles which now present themselves will be overcome and the self propelled delivery car universally accepted.

A REPAIR PIT

OIL AND GASOLINE CAGE

Courtesy *Horseless Age*

CHAUNCEY OLCOTT, THE WELL KNOWN ACTOR, IS A MOTOR CAR ENTHUSIAST

The How and Why of the Automobile

A SERIES OF PRACTICAL LESSONS

By Fay L. Faurote

(Continued from March Issue*).

COOLING.

YOU will remember that in our last article, we discussed the various systems of ignition. We will now take up the method of cooling the cylinders, and describe the different forms employed in modern practice.

THE COOLING SYSTEM.—In the gas engine, instead of burning the fuel outside, and using some medium to convey its heat into the cylinder of the engine, the combustible mixture is directly introduced into the working space behind the piston. Under these conditions it will be readily seen that the surrounding walls of the cylinder will become very quickly heated, and if some method of cooling is not provided the friction caused by the unequal expansion would soon become so excessive as to stop the motor.

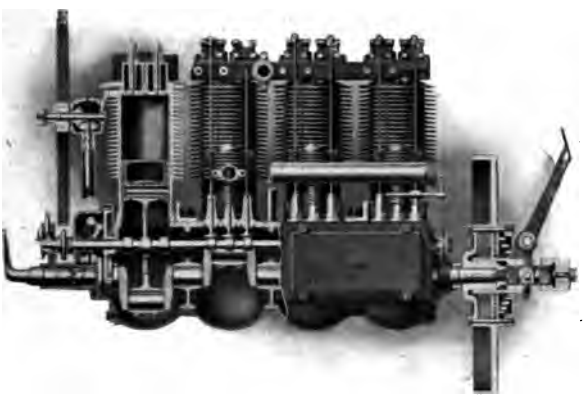


FIG. 73 A TYPICAL AIR COOLED MOTOR.

The temperature sometimes runs as high as 2,500 degrees Fah. or higher and it is therefore necessary to design the combustion chamber so that its walls may be readily and quickly cooled to a reasonably low temperature. The process of cooling involves the transfer of heat from a warm body to a cooler one, and may be brought about directly or indirectly. Both the direct

* This series which has attracted wide interest, were begun in the March issue, 1905. Subsequent installments are to be found in April, May, June, July, August, September, October, November and December issues, 1905, and January and March, 1906.

FIG. 76.
RADIATOR WITH COILS OF SMALL TUBES.

FIG. 77.
RADIATOR WITH FAN.

and indirect systems are used in automobile construction, the former being known as air cooled vehicles, the latter as water cooled cars.

AIR COOLED MOTOR.—In the first case a blast of air is forced past the cylinder walls between fins, or any other cooling device which may have been added to increase the radiating surface. There are various types of these cooling devices, the simplest being the plain cast iron cylinder fitted with concentric cast iron or copper rings or flanges, which are embedded in the walls at the time of casting. Some use plain cylinders into whose walls are screwed short metal threaded rods, others use a similar construction substituting copper tubing drilled full of holes, and still others use flanges of aluminum, or other heat conducting metals. While the various methods of construction differ greatly yet the same result is sought, the rapid transfer of heat to the air, and the subsequent cooling of the metal walls.

The total amount of radiation surface on the cylinder must be such that when a certain amount of air passes the surface per minute, enough heat will be removed to insure a proper working of the motor. Just what this temperature is, and just how many square inches of cooling surface are required for a particular cylinder are matters of different opinion among designers, and while it is possible to figure theoretically the area of cooling surface which will be required, yet it must be left to the experimental engineer to determine just what the car will do when put on the road.

THE ADVANTAGES OF AN AIR COOLED MOTOR.—First. There is no water system, no tank or radiator to be taken care of.

Second. Owing to the absence of all water jackets the weight of the will be considerably less.

Third. The car can be run without fear of freezing during the winter.

Fourth. It is not necessary to carry a water supply, and there are no pipe connections to leak.

THE DISADVANTAGES OF AN AIR COOLED MOTOR.—First. Cylinders sometimes become very hot, especially after the motor has been running under load on low speed.

Second. It is frequently necessary to use an excess of lubricating oil in order to overcome the friction which causes unequal expansion.

Third. Owing to the high temperature it is necessary to regrind the valves often.

Fourth. The whole motor is more sensitive, and requires careful watching and frequent adjustment.

WATER COOLING.—When the indirect method of cooling is used, instead of using air, some cooling liquid, such as water, or oil is circulated through jackets built around the cylinders, and later forced into the radiator in the front of the car where it gives up its heat to the air.

Fig. 74 shows the diagram of such a system. You note that the radiator forms a source of supply. The water is driven by means of a pump from the bottom of the radiator, and forced into the bottom of the cylinder water jack-

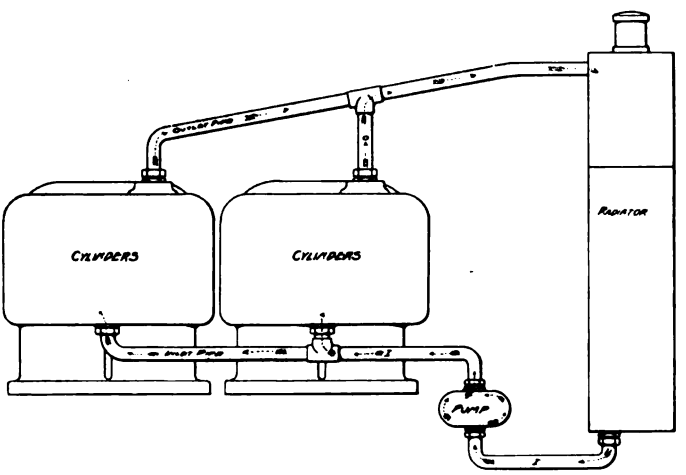


FIG. 74. SHOWING WATER COOLING SYSTEM.

ets, where it rapidly absorbes the heat from the metal walls, and rises to the top from which it passes again to the radiator. Here it is circulated through a set of tubes having a large amount of radiating surface, and rapidly cooled by means of the air which passes through the radiator.

RADIATORS.—Radiators vary in their construction, some manufacturers using round tubes fitted with circular or squared fins, some use a cellular construction and still others a combination of the two. The main tubes

are generally made of copper or brass and the fins of copper or tin. The shape of the radiator is determined by its position on the car, and the general design of the body. Various shapes are shown in the illustration. In some types the circulation is through horizontal tubes in others is through vertical tubes, and in some it is made to pursue a devious course. Everything possible is done to increase the cooling power of the radiator, and all manufacturers are now coating the entire surface with lamp black, as this has been found to give excellent results. In addition to this all up-to-date makers have provided the cylinders

FIGS. 78-79. TYPICAL RADIATORS.

with pet cocks, so that they may be drained easily, overflow pipes, and expansion chambers, and have worked out their designs in such a way that no steam pockets or air spaces can be formed.

THE WATER PUMP—.Water pumps, like radiators, are made in many different styles, some of the rotary variety, some centrifugal, fitted with paddles like a water wheel, and others, known as gear pumps, simply two gears which run together inside of a casing. This latter type is becoming very popular, and is used now on nearly all of the modern cars. Fig. 75 shows a section of such a pump. You note that the water enters at the bottom and is forced around on the outside of the gears. As the cogs are always in mesh it is impossible for the water to travel back again, and consequently a steady flow is the result. This type of pump is very easily operated, being driven from the engine itself, and is positive in its action. It should, however, on account of its construction, be kept carefully lubricated, and not allowed to wear.

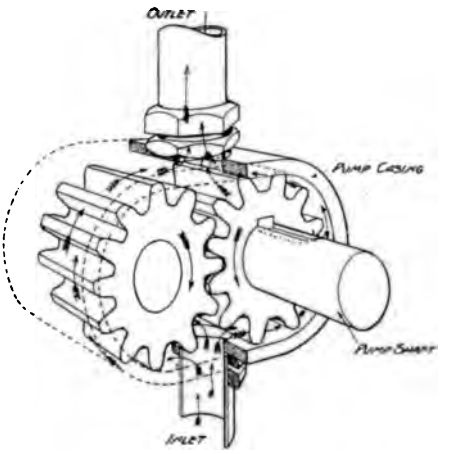


FIG 75. SECTION OF PUMP.

THERMAL CIRCULATION.—It is possible, if the system is laid out properly, to circulate the water without the aid of a pump. This is due to the fact that water when heated rises, and consequenly, if all the passages are free, a thermal circulation will be set up which will continue as long as the motor is running. In passing through the radiator the cold water naturally has a tendency to go to the lower level, and, therefore, the coldest water is at the bottom of the radiator where it should be. In other words, the system works exactly like the hot water heating system in a house. The disadvantage of this system is that it requires a large amount of water, and therefore a forced circulation is much more often used.

THE PIPING.—Nearly all of the piping used in a water system should be tubing if possible, because it is much more satisfactory than hose, and less

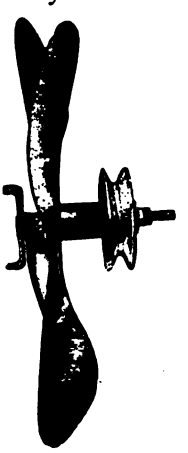
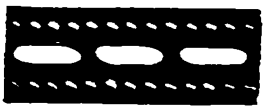
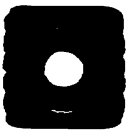


FIG. 80. TYPICAL FANS.





E ARRIVAL AT POUGHKEEPSIE ON THE RUN FROM NEW YORK, ON HIGH GEAR

ow Priced Serviceable Garage

BY WALTER C. SCOTT

From Horseless Age

uilding a garage the first thing to ught of is the site. The owner choose a high one with plenty of t if he would avoid dampness. Next the floor, which should be of cement, towards the front. If the owner he may have a pit in the centre, s is by no means necessary, especially engine of his car be under the hood t under the body.

ell built frame building is good for all practical purposes. Its size pend on that of the owner's pocket- ut in the writer's opinion it should less than 10 by 20 feet. There be a window at each side, and a t is highly desirable, not only for g the owner to see the inside of his car, but for ventilation. Some men prefer to have doors at both front and back of the garage, thus doing away with the annoyance of backing in or out. A work bench may be erected at one side, and a tool chest is handy.

There is, of course, an element of danger in connection with the heating, lighting and draining that should not be neglected. Steam heat is best, but where it is not to be had a room should be built at the side of the garage for a stove or a small furnace. The only artificial light to be used in the building should be produced by electricity. If the current cannot be obtained from a power house a pocket flashlight can be used when needed, but all repairs are best made in the daytime.

The water should be led through a drain to a cesspool outside the building, thus avoiding the danger of gasoline explosions. Less than a month ago the writer noticed a case where a man was painfully injured by dropping a lighted match through the drain into a cesspool beneath the floor.

If the owner cannot afford to buy one of

the gasoline storage outfits he should place a galvanized tank at a safe distance from the garage, and under no conditions should gasoline be kept in the building in an open vessel. If the city water be installed a hose can be used to fill the radiator and to wash the car. Care should be taken to loosen the mud with the water before a sponge is applied. Tires should not be washed, as water injures the rubber.

RALPH R. OWEN AT THE WHEEL OF THE MACHINE IN WHICH HE MADE A VERY RAPID RUN RECENTLY FROM CINCINNATI TO LANSING. THE PICTURE WAS TAKEN JUST AFTER HIS ARRIVAL IN LANSING. MR. OWEN'S COMPANION IS MR. BOTTS, OF CLEVELAND, WHO ACCOMPANIED HIM ON THE TRIP

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A Plea for Private Garages

BY DR F. M. CRAIN

From Horseless Age

GARAGES in cities are necessary for the accommodation of those who cannot provide a permanent house for their automobile, or who have not the time, ability or inclination to care for their machines. But in villages and small towns, where garages could not be made to pay, the necessity for caring himself for one's automobile is imperative. The housing of an automobile in a public garage usually implies a contract to keep the car in shape for service. To the owner of an automobile this is a weak point in patronizing a public garage, for he soon falls into the habit of letting the garage employees take full charge of his car, except when he is on the road, consequently he does not become familiar with details in the mechanism and managing of his car, which is essentially necessary in order to make a success of automobiling. Responsibilities that cannot be evaded oftentimes pave the way to success in professional life. So it is with reference to handling an automobile. When one is compelled to rely on his own recourses he at once "gets busy," and often accomplishes with ease and satisfaction what at first seems impossible.

There are only two ways of making automobiling a success: (1) by employing a competent and conscientious chauffeur and depending upon him to care for and drive the machine; but this method deprives the owner of the real pleasure of automobiling, for he is not an automobilist, but only a passenger; besides, this method is expensive, and beyond the financial ability of a large percentage of those who use the automobile in the discharge of their business. (2) For the owner to be master of his vehicle—not only to take charge of the wheel and throttle while on the road, but, if possible, to take full charge of his machine while in a garage, studying carefully its mechanism in every detail, and making small repairs when necessary.

The importance of caring for one's own machine at home cannot be too strongly impressed on the minds of beginners. It is the little irregularities in the early life of a child that should be safeguarded, and the more serious irregularities later in life will come less frequent. Even so with the automobile. A thorough knowledge of the anatomy and physiology (as it were) of the automobile is essential in order to detect early any departure from the normal condition of its mechanism, so that small and seemingly insignificant defects might be repaired by a novice with a limited number of inexpensive tools in his private garage.

If the little defects are remedied early and all parts kept in proper adjustment, with a sufficient amount of lubrication a car can be made to do good service, and the more expensive repairs necessitating the services of a machinist become so infrequent that one does not mind it. The expense of equipping a home garage with sufficient tools to make small repairs is insignificant.

The automobile house should be sufficiently large for the car and provide room for a work bench, vise, anvil and drills. Very few bench tools will be needed to make all small repairs. If one has the means and the inclination there is almost no limit to the exspense to which one may go and the convenience that may be provided in equipping a home garage, but I submit it would be to the advantage of the owner to attend to all small repairs and depend on experienced workmen for the more difficult and important ones.

It is not necessary that a building should be made purposely for housing an automobile. My car occupies floor space by the side of my carriages, and the place answers every purpose of a specially built house.

For a physician the home housing of an automobile is quite necessary for convenience in case of night and urgent calls. I always prepare my car in the evening for any emergency calls that I may get during the night, and when a call comes I am no sooner dressed than I am on my way, often reaching my destination long before I am expected, which would not be the case if I kept my car in a public garage

remote from my residence, especially if the garage is closed during the night.

In addition to the necessary tools that a home garage should contain for minor repairs it should have fresh batteries, wires, terminals, bolts, screws, nuts, rubber packing and a dozen or more little articles that are needed in keeping cars in running order. The saving in the aggregate cost of minor repairs that can be made by anyone competent to manage an automobile, and the pleasure at finding one obtains of his machine by caring for it at home are strong points in favor of private garages.

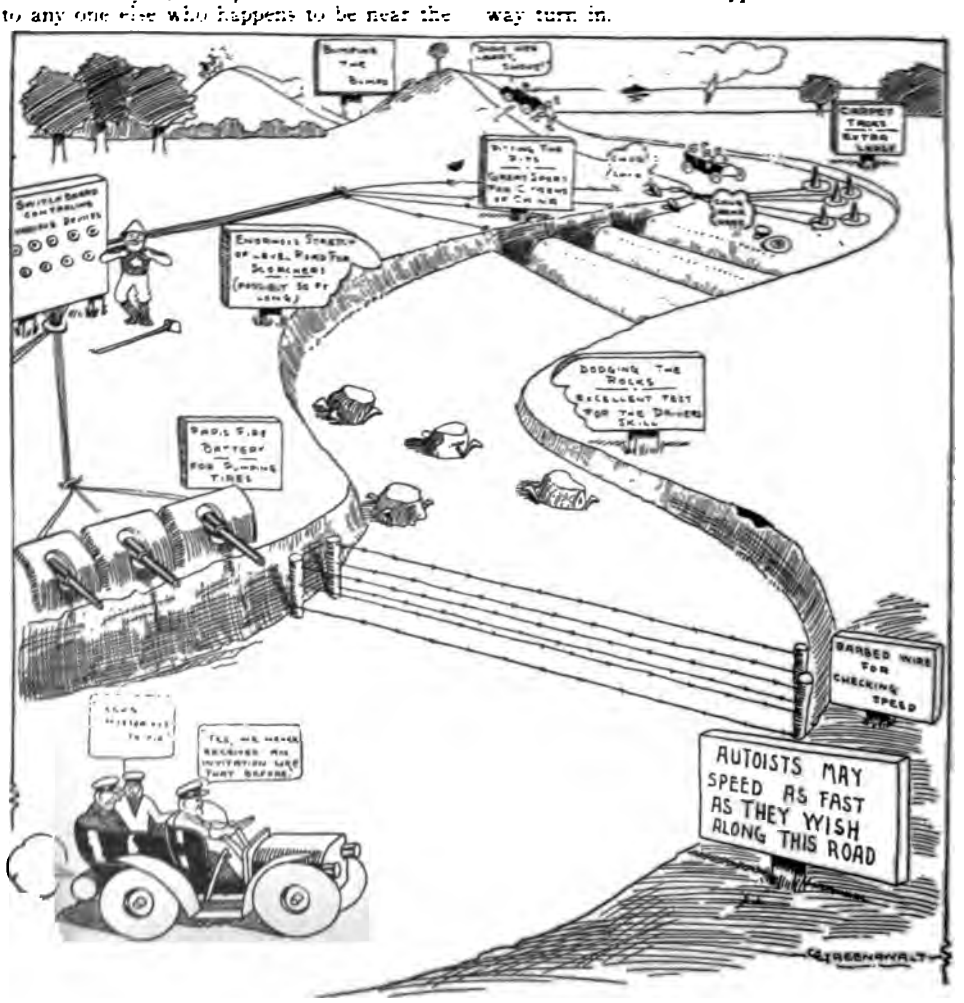
How to Take Corners

Irving

Taking corners at high speed is dangerous, not only to occupants of the car but to any one else who happens to be near the turn. To this particular form of "road hog" three out of every four out-of-town accidents are accountable. This is especially true of New Jersey.

It is impossible for a driver to see down the street until he has negotiated the turn, which generally is too late to avoid a collision with horse, car, or pedestrain traveling the hidden road.

A little common sense will enable the motorist to avoid this contingency. First of all he should reduce his speed to a minimum. Then, if approaching from the left instead of cutting to the narrow road on his own—the right—side of the main road, he should run over to the left, and when abreast the treed way, so that he has a clear view of it for a distance, turn straight again. He should adopt the same tactics in passing these narrow, treed roads—swing to the left until he has passed, then run back to the right. In approaching from the right he has only to stay on that side, and when opposite the narrow way turn in.

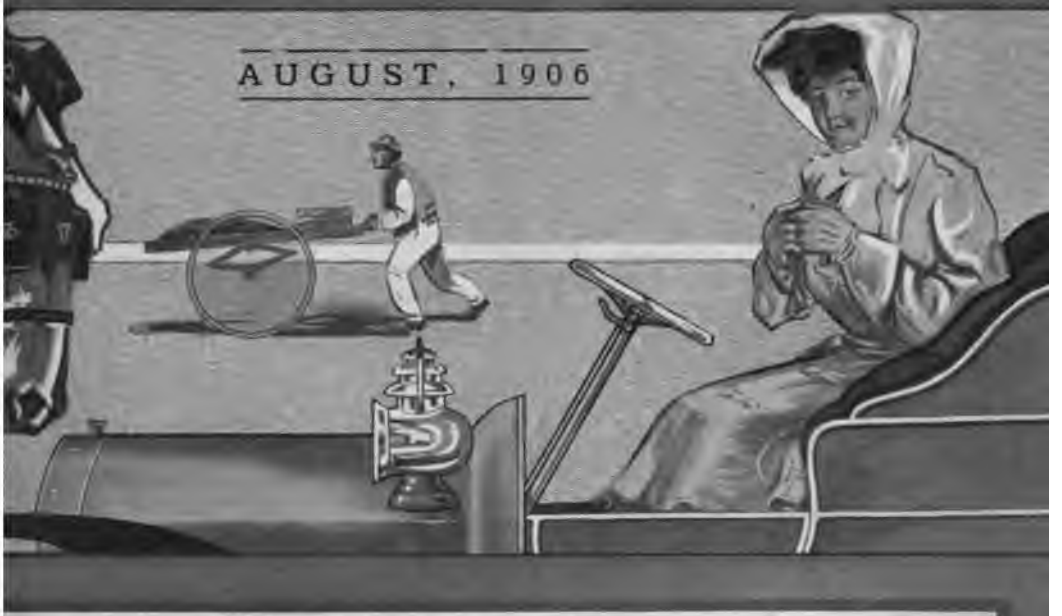

DODGING THE ROCKS
EXCELLENT TEST FOR THE DRIVERS SKILL
BARBED WIRE FOR CHECKING SPEED
AUTOISTS MAY SPEED AS FAST AS THEY WISH ALONG THIS ROAD
GREENWALT

THE OPENING OF THE AUTOMOBILE SEASON

MOTOR TALK

MAGAZINE OF OUTDOOR SPORT

AUGUST, 1906



On The Glidden Tour

LEAVING BUFFALO ON THE START FOR BRETTON WOODS

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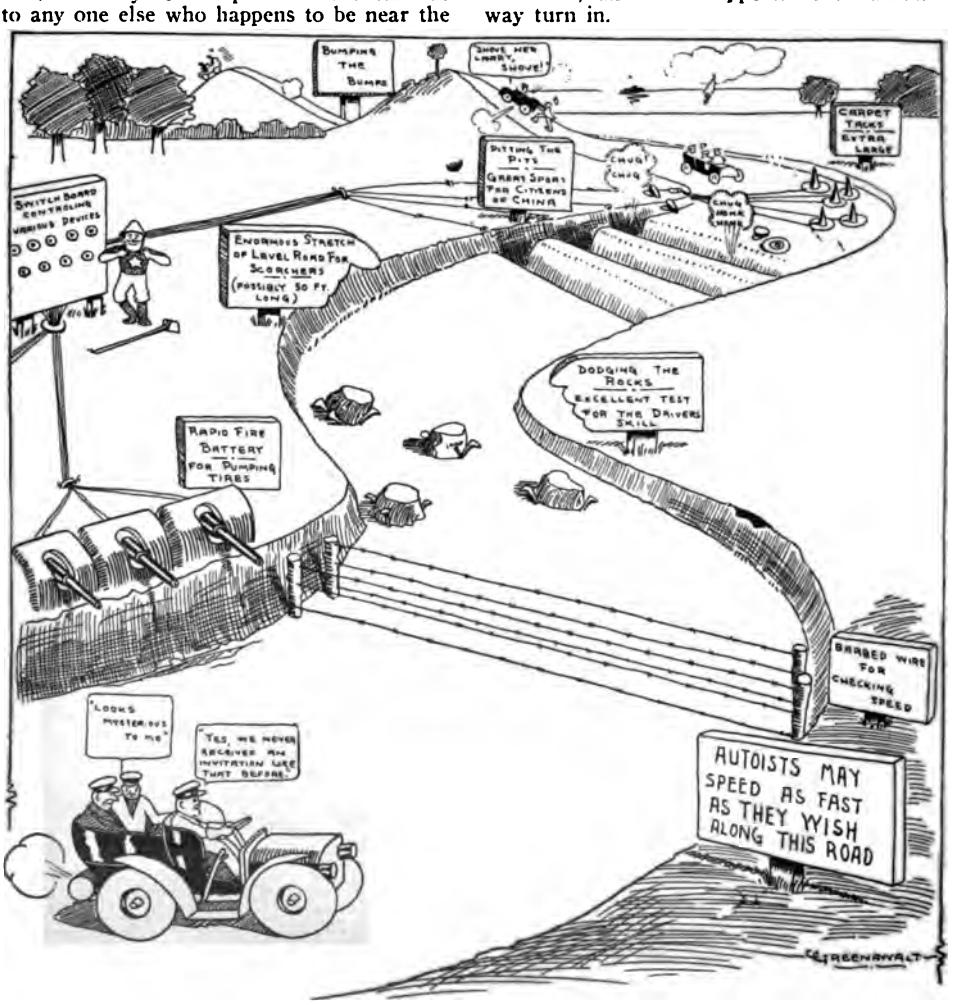
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CANTON, OHIO

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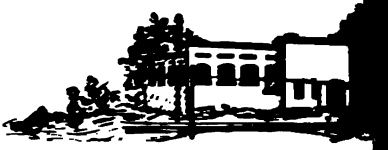
CANTON, OHIO

A MIGHTY IMPORTANT QUESTIO

Power Plant *vs.* Distributing Station



Did you ever notice two kinds of plants in general use by electrical companies ?

The big *Power Plant* with its magnificent machinery by which the current—the power—is generated.

The *Distributing Station* with its few machines through which the current is passed and divided into lesser currents and distributed. Nothing originated here.

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This agency is a **Power Plant.**

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DETROIT

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¶ Having originated the end opening power screw binder, we then set to work to obtain a substitute for the Linen or Cloth Hinge Sheet which was such a disadvantage on account of the increased thickness of the binder at the binding margin.

¶ Our **Bond Hinge Paper** has all the advantages without any of the disadvantages of the Linen Hinge, and is the only sheet producing flat opening results as it is the only sheet that is thinner at the binding margin.

¶ Full description of this Ledger, our Improved Trial Balance Book, and samples of our Bond Hinge Paper are furnished free upon request for our Catalogue P.

The Richmond & Backus Co.

DETROIT, MICHIGAN

Established 1848

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BOSTON AGENCY:
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170 Summer St.

ECHOES FROM THE GLIDDEN TOUR—AN INTERESTING BIT OF HIGHWAY.

Motor Talk

A Magazine of Out Door Sports

VOL. II. AUGUST, 1906 No. 8

On the Glidden Tour

Thirteen Cars Tied for the Cup. The Contest a Triumph for the American Built Car

Comments from the Press.

THE Glidden Tour which began at Buffalo, New York, on Thursday, July 12th, ended at Bretton Woods, Saturday, July 28th. Of the 58 cars starting there were 38 survivers when Bretton Woods was reached and 13 of these finished with a perfect score.

As a result the Glidden trophy was not awarded. It remains in the hands of the Buffalo Automobile Club the same as last year.

Glidden Trophy

The Deming Trophy was awarded to Mr. C. W. Kelsey, Mr. A. A. Post with whom he was tied, withdrawing in his favor.

The lucky 13 were: P. P. Pierce, Buffalo; A. E. Hughes, Philadelphia; P. S. Flinn, Pittsburg, G. M. Davis, Buffalo; L. J. Petre, Cleveland; George Soules, Toledo; W. C. Walker, Hartford; W. E. Wright, Springfield; C. F. Barrett, Hartford; Ernest Keeler, Lansing; C. Burman, Cleveland; F. E. Wing, Austin; G. G. Buse, Buffalo.

After taking a fall out of those who criticised but did not go on the tour, Motor World says, editorially:

"It must be conceded that no route better adapted to bring out the real qualities of a car, nor one that would afford more of interest to the tourists themselves could have been selected. There were probably more lessons in construction to be gleaned from the experiences of the various cars on the tour than have even been forthcoming from any single event of the kind. The American maker has been proud of his ability to provide axles and suspension designed for American roads, but the frequency with which these essentials defaulted plainly showed that there is still considerable to learn. That the foreign cars should have suffered in this respect was not strange.

"It also showed in a manner hardly less striking than the now historic endurance runs to Buffalo and Pittsburg in earlier days, that the proportions of weight to power have not as yet been satisfactorily settled. Many of the high-powered cars stalled on hills

Deming Trophy

or were unable to pull themselves out of ditches even when relieved of all unnecessary load. But where many of these high-powered and high-priced cars found it difficult going the heavily loaded baggage wagon, light touring cars and even a single-cylinder runabout covered the ground, forming a striking commentary on the comparative efficiency of the two, price and power considered. Taken all in all, this year's Glidden tour may well go down as one of the most instructive of its kind and after the discomfort and ill-feeling attendant on the inevitable errors of judgment and temperament that will crop up regardless of the efficiency or otherwise of the management, those who can now see nothing of value in its experiences will doubtless be of the same opinion."

Motor Ways says among other comments:

The large number of cars finishing the Glidden tour with perfect scores is a conclusive demonstration that the American car, no matter what the selling price, can meet the most strenuous rules and come through with flying colors. The severe test given the cars in the Glidden tour has proven that they are not only worth the money asked for them, but that they are fully as satisfactory as any cars made anywhere in the world."

Commenting editorially, The Automobile says:

"It is one thing to conduct a strictly run contest for a trophy and quite another to promote a pleasure tour. That the two could be successfully combined was questioned before the Third Annual A. A. A. Tour started from Buffalo. Now that it is over there are many who have no doubt on the subject, among them none other than the chairman of the committee which planned and managed the event primarily held for the possession of the Glidden trophy.

"Much good advertising will fall to the American industry as a whole resulting from the excellent showing of the automobiles which participated in the trying tour

ON THE GLIDDEN TOUR THE OFFICIAL CAR, OLDSMOBILE PALACE TOURING CAR DRIVEN BY DWIGHT B. HUSS, OF TRANSCONTINENTAL FAME. THIS CAR TRAVELED FULLY 350 MILES FURTHER THAN THE OTHER CARS ON THE RUN. IT ESCAPED ACCIDENT AND TROUBLE OF ANY KIND.

ON THE GLIDDEN TOUR- PASSING A CONTROL. THE "WHAT'S WANTED" CAR WHICH MADE THE RUN WITH A PERFECT SCORE.

from Buffalo to Bretton Woods. Unmistakably emphasized were the sturdy qualities of the travelers over roads that frequently were such only in name, for they climbed apparently impossible grades, bumped a hundred times a day over water breaks, and ploughed through sand inches deep.

"But the struggle for a trophy requires hard and fast rules and observers to see that such restrictions are faithfully complied with. Furthermore, a much better plan than the one of time penalties for repairs and replacements is needed. The essential parts of an automobile, if replaced, should bring stipulated discredit marks; and since the market has nothing to do with the tires that are worn to shreds on our indifferent American highways, this form of trouble should not be charged except in very minor degree against the car.

But the most transparent deduction of the tour just ended is that a serious contest wherein so much is involved cannot be linked with the journey of a party of pleasure seekers."

Among other things Automobile Topics says:

"The tour has been therefore an instructive one in many ways. The tourists are much wiser now than they were a month ago—and they have paid a pretty price as tuition fee. As to the educational effect, on drivers, passengers and the builders of the cars, that cannot but prove to be of the most illuminative and far-reaching character. The entire route, from the western extremity of New York State, through Canada and back again through Maine and New Hampshire, has been a vast testing ground on which 1906 cars have demonstrated their staunchness and efficiency and 1907 models have received an exhaustive trying-out. In this respect the tour has been valuable to a remarkable degree. It has been characterized as the supreme test of the modern touring car—a test from which it has emerged triumphant from every viewpoint. The fact that no less than thirteen cars finished the 1,100 mile run with perfect scores is irrefutable evidence of this; while the fall from grace of an almost equal number of other cars is directly attributable to causes having absolutely nothing to do with the mechanical efficiency of the vehicles themselves."

FINAL SCORE, GLIDDEN TOURING CONTEST.

Entrant.	Car	H. P.	Total.
P. P. Pierce, Buffalo	Pierce	45	0
A. E. Hughes, Philadelphia	Pierce	45	0
P. S. Flinn, Pittsburg	Pierce	32	0
G. M. Davis, Buffalo	Thomas	50	0
L. J. Petre, Cleveland	Stearns	40	0
George Soules, Toledo	Pope-Toledo	40	0
W. C. Walker, Hartford	Pope-Hartford	25	0
W. E. Wright, Springfield	Knox	40	0
C. F. Barrett, Hartford	Columbia	28	0
Ernest Keeler, Lansing	Oldsmobile	30	0
C. Burman, Cleveland	Peerless	45	0
F. E. Wing, Boston	Marmon	30	0
G. G. Buse, Buffalo	Packard	24	0
R. R. Owen, Cleveland	Oldsmobile	30	2
E. E. Kirk, Buffalo	Thomas	50	2
D. Fairbanks, Chicago	Cleveland	30	2
A. Holden, Cleveland	Stearns	40	3
W. W. Burke, New York	Columbia	40	3
T. P. Forbes, New York	Reo	16	3
H. K. Sheridan, Cleveland	White	18	5
E. R. Lozier, New York	Lozier	45	6
Palmer Abbott, New Orleans	Oldsmobile	30	10
N. H. Van Sicklen, Chicago	Apperson	45	11
J. H. Becker, Clyde	Elmore	35	11
M. Hart, New Britain	Corbin	24	13
S. B. Stevens, Rome	Darracq	50	14
F. J. Pardee, Chicago	Packard	24	15
W. A. Danzer, Hagerstown	Crawford	28	19
John Bamford, Lansing	Oldsmobile	30	21
J. H. McDuffie, Chicago	Stoddard	35	26
D. C. Kirkham, New York	Maxwell	16	27
R. H. Crawford, New York	Stevens-Duryea	50	57
B. H. Knowles, New York	Locomobile	35	99
C. G. Wridgeway, New York	Peerless	40	126
P. Corbin, New Britain	Corbin	24	254
J. A. Mechaley, Stamford	Pope-Hartford	24	409

judge. "Well, I guess we can take care o' her. She can stay up to my house."

Elton had a fleeting glimpse of Florence leading the life of a farmer's daughter, and of Mrs. McArthur exploding with imprecations. He was mildly aware of a number of terms, such as "habeas corpus," "trial by jury," and so forth, and he felt that some one of them ought to have some merit. But those necessitated wiring for money, and a delay to fight it out, which was impossible under the circumstances. He was about to seek the only satisfaction remaining, in using his tongue upon the judge, his accusers, the bystanders and the situation, when an idea came to him.

"Judge," he began, calming himself, "will you give me a few moments to talk with the young lady?"

"I guess it won't hurt anything," replied the magistrate. "I guess so."

Elton stepped into the adjacent room and found Florence sitting as he had left her, huddled up in a chair, with her face still obscured from view. She did not even look up as he entered.

"Little girl," he said, softly, "I'm afraid we're up against it."

"I believe we are," she replied slowly, without moving.

"Can I count on you to help me out?"

Florence hesitated a moment. Her elbow still clung to her side, and her head was bent. Then she lifted her veil and looked up with a swift smile.

"You know, Rodney," she said, "that anything I can do— What is it you want?"

Elton supressed his elation as he replied: "Follow my cue, and stick to me to the end. Stick!"

She put her hand into his, and he went on:

"Take off your veil and hat. Never mind about the hair," as she started to spoil the dreamy effect produced by a few straying locks. "Now come with me, and don't balk, whatever happens."

The judge, in the meantime, had hoisted his feet upon his desk and resumed his rumination on the tobacco and toothpick, but as Florence tripped into the room on Elton's arm, the feet hit the floor with a clatter, and the toothpick fell from an open mouth. Luke surreptitiously threw a half-finished cigarette through the open window, and buttoned the top button of his shirt. Elton took in these details with a little gust of glee, but he kept his face straight as he marched up to the bench and began speaking:

"Your Honor, you've just fined me a hundred dollars. I suppose that I was careless, and did a few things that I ought not to have done; and under ordinary circumstances I'd pay it, even though it looks somewhat steep. But you see, I haven't the money with me, and I must take care of the young lady beside. If I gave you every cent I have and started to work out the rest, I should still have to leave her in the lurch. Besides, Judge," he continued, and his voice softened to its most persuasive tone, "it's a little bit rough on a man to be relieved of a hundred dollars, or to be sent to jail, just when he's about to start on his wedding journey."

He felt a swift little clutch of his arm, but he went on unabashed, for he could see the straight lines of the judge's face beginning to relax.

"There has been some little talk of marriage between the young lady and myself. In fact, though it might be hurrying the matter somewhat, it would be very pleasant if we could be married today, here. Now, if you can cut the fine down to five dollars, that will leave me just enough to pay your fee, recompense my friend here for the sheep that he has lost, and have a little left to broach a keg, so that you may all drink to our happiness. What do you think of the plan?"

He knew that he had touched the judge in a weak point. A fine would go into the county treasury, but a fee would line the judge's own pocket. Besides, at the mention of refreshments, the judge had brightened perceptibly. He looked at the girl a minute, then said:

"I ain't heard much rejoicing on the part of the young lady. It takes two to make a weddin'."

Elton drew a long breath and waited. There was a silence of a few seconds, then Florence thrust her arm a little further through his, and looking the judge straight in the eye, with a smile, said:

"I am ready to begin as soon as you are."

The judge, disregarding any question as to the opinion of the interested parties in this settlement, turned to Luke.

"The court's adjourned," he announced. "Luke, go into the other room and get my Bible. You'll find it over in the corner, under that pile of law-books, or else in that old soap-box on the top shelf."

A few minutes later, after Elton had distributed all his money except a few cents, and shaken hands all around at least three times, he followed Florence into the next room, to get her coat and hat.

"I guess I stuck," she said laughingly, over her shoulder; "but what will Mrs. McArthur say?"

"I don't give a —" began Elton; but he stopped as the door swung shut behind him, for he suddenly decided that his lips could be otherwise better employed.

of them were serious in their determination to put a stop to the speeding of automobiles, on the venerable highway that had been sacred to the ox-team ever since Rigeville was settled by adventurous Windsor people.

"Who owns the roads, anyhow?" said Joel. "Who pays the taxes up here?—do we or do those blamed city dudes? Would we let any of our own people play steam engine on this old street? Not by a jugful. And we ain't go'n' to let those smart Alecs come up here to race their bad-smellin' automobiles. I'm go'n' to fasten a piece of tape across the road at 'Bijah Weedon's just as a hint to stop. Our own teams can lift it over their heads like clothes-lines and stand the inconvenience for the public good."

No one objected to this reasonable idea, and Joel continued: "And I thought 'twould be a good idee to have just beyond the tape, say in front of my house, a couple of ropes meetin' across the road and snapped together by clips. Our teamsters can unbuckle 'em and pass on and buckle 'em up again; but automobiles will be brought to a full stop, and then I'll go out and, bein' a justice of the peace, I'll fine 'em if they've been go'n' too fast."

"Supposin' they ain't got any money?" said one.

"That's all them fellers have got. Ain't got any brains, or they wouldn't ride in the pesky toys."

Joel's scheme was voted a good one. There was not a man on the street, with the exception of the summer resident, who had any sympathy for automobilists.

Next day the tape was stretched across the road, about an eighth of a mile beyond the brow of Chestnut Hill, and about fifty rods beyond that the ropes were snapped together, and proved an effectual barrier for all teams. Indeed, there was much grumbling on the part of the women who that day drove by on their way to the meeting of the sewing society "at the home of Mrs. Israel Palmer."

But Joel, who had appointed himself inspector, was on hand to open the toll-gate for them, and he was audacious enough to say to pretty Madge Pierson that forty years earlier he would have demanded the regulation toll from her.

"Forty years ago, I would have lacked twenty years of being here, Uncle Joel," laughed she, and chirruped to her horse.

"You'll live to see automobiles abolished by law. That's the advantage of havin' been born so late in the century."

At that very minute an automobile, driven furiously, was starting up Chestnut Hill. The chauffeur did not stop to read the notice, and the pretty girl by his side had eyes for nothing but the rear of the road. She acted as if she expected pursuit. "Why do you go this way, Harry?"

"Because he'll naturally expect us to take the valley road, and when I get to Ridge st. I'll go like Sam Hill and we'll get to the Baptist minister's ahead of your father."

"If nothing stops us."

"Nothing will stop us, my darling. This machine isn't afraid of any hill in Connecticut."

"Yes, but we may be arrested for speeding."

"Nothing but farmers up on the hill, and they'll all be at work. An hour from now you and I will be Mr. and Mrs. Bacon. Doesn't it sound great?"

"Yes, dear; only I wish you were going to take my name. I think Atherton is prettier than Bacon."

"So you are; but the longer we live together the more I'll look like you, you know."

Up the hill they went, the light machine responding to her levers as if she knew what was wanted of her and longed to leave the pursuing parent forever.

In front of the house upon the hill stood Joel talking to his granddaughter.

"What's that, grandpa?" said the little girl, her quick ears catching the sound of the ascending machine.

"Crows," said the old man, chucking her fondly under the chin.

"I don't mean that, grandpa. I know crows. I mean that thup-thup, thup-thup sound."

"Your ears are better than mine," said the old man, his eyes catching fire. "I do believe it's a pesky automobile you hear."

"Do you want it to be one, grandpa?" said the girl, "I thought you hated them.

"But I want to show 'em the law's got to be obeyed. That's what I want! Yes," said he, cocking his head to one side. "It is one, sure enough. Now, you'd better go into the house, child, because I may talk some." The old man walked nimbly to a place midway between the tape and the rope, and awaited the coming of his adversary.

"Yes, it's one of 'em, sure enough. Maybe they'll stop—I guess yes, when I read the riot act to 'em."

The machine made the summit of the hill, and the chauffeur, changing the gear, prepared to make a record run along Ridge st.

"Oh, what's that tape, Harry?"

"Curse it! Some interference," said Bacon. "Hello! there's a hayseed."

The 'hayseed," otherwise known as Joel Beecher, descendant of a long line of sturdy farmers, advanced into the middle of the road and began waving his arms.

"We can't stop," said Bacon and the machine sprang ahead, breaking the tape.

"I guess you'll just about stop in a minute," said Joel, pulling out a revolver and

preparing to puncture the rear tire if it should be necessary.

At sight of the revolver the girl screamed, but her protector plunged doggedly on toward Joel until he saw the stout rope barring the road.

The roadway was wide, and Bacon managed to describe a circle and brought the machine to a standstill just as Joel fired off his revolver and—missed the tire.

"Say, old man, we're in a great hurry."

"That's why I stopped you," said Joel dryly, putting his revolver into his hip pocket. "We're opposed to hurry on Ridge st. You've laid yourself open to a fine of twenty-five dollars, which I want."

"And then may we go on?" asked the girl. Her lover was scowling at Joel and wondering just how far he had right on his side.

"Then you may go on," said Joel in a softer tone, for the girl was pretty and had a confiding tone to her voice that was likely to make friends for her.

"That is," he added, "if you go on slow. This business of makin' a railroad of our street has got to be stopped right away, if I fire at every wheel that goes by—"

"And miss it," said Bacon suggestively.

"If you hadn't turned I'd a got ye," said Joel. "I warn't lookin' for that."

"Look here, Mr.—"

"Beecher's my name. Yes, same family," said he, to save the usual question from being asked.

"Well, Mr. Beecher, your namesake was a fair sort of man," said Bacon quickly; "and if he'd been here do you know what he would have done? He would have married us. We're in an awful hurry. Her father doesn't like me, because I'm not rich enough, and we are getting away from him."

"He comin' up too? I'll fix his tire!"

"No, he's gone by the valley road. Can't you help us out? I'll pay the fine. Just show us the way to the nearest minister. One up here?"

"Please help us!" said the girl in a tone that went straight to the old man's heart.

"How old be ye?"

"I'm twenty-one, and Harry's older. We have a right—"

"Only your father won't admit it. Well, ma and me run away and never regretted it." He rubbed his chin reflectively. "There ain't no minister up here now; but there's the Methodist one down in Swamp Holler."

"Jump in and show us the way. I'm not sure I know where anyone but Mr. Holden lives, and he's on the valley road, and this delay has helped Mr. Atherton. Will a check do for the fine?"

MR. AND MRS. R. G. SPEARMAN, OF NEWBERRY, S. C., STARTING OUT FOR A 20 MILE RUN WHICH THEY MADE IN ONE HOUR AND 45 MINUTES WITHOUT STOP.

ON THE GLIDDEN TOUR THE START FROM BUFFALO

"Never mind the fine, if it's a case of life or death."

"No, it's a case of marriage."

"Same thing hundred years from now," said Joel grimly. "I'd like to try one of those things." He looked at the machine with a newly awakened interest. "It's about two miles over to Abiel Pitkins in Swamp Holler. Take me there and bring me back, and I'll show you the way. You ain't got to hurry. Your father'll never think of Pitkins. He's a parson in a small way; but a marriege is a marriage."

Joel uncoupled the ropes, then got in and sat down in the front seat with an expression on his face midway between sheepishness and delight.

"Hark!" said Miss Atherton. "Is that a machine I hear? Oh, hurry, Harry!"

A moment later a green touring-car, propelled by a square-jawed, white-mustached man, appeared at the top of the hill.

"It is father! It's too late."

"You can do it!" said Joel excitedly. "I'll show you the way. Let her go. By thunder and Mars! the old man can't git yer, if you keep cool. This looks like the fastest machine."

The automobile shot forward so suddenly that Joel fell back in his seat. After that he gripped the arm.

"We're gaining on them," said Grace; her eyes on her father, who grimly kept his hand on the lever of the machine and with set mouth rode like fate.

A mile was made at terrific speed. Farmers in the fields and here and there a housewife saw the two automobiles fly past, Joel, in the foremost one, looking as if he enjoyed the swift motion, and the man in the rear one looking like nothing but Nemesis.

"I can beat him on the level; but I'll have to slow up on the descent. My brake's been acting out of kilter on hills," said Bacon as they approached the place where they were to leave the high road and drop into Swamp Hollow.

"He won't catch yer," said Joel. And he spoke as if he knew what he was talking about. "I'm seein' this thing through now, and you'll git married, all right. Your father is just about exceedin' the speed limit, and I ain't a-goin' to stand it much longer."

When they dropped over the brow of the hill Bacon immediately applied the brakes. A marriage was a marriage; but he could not risk the life of his bride-to-be.

Old Atherton, however, had only one thought; to overtake his daughter, no matter what happened.

"He's gaining on us, Harry!"

"By Godfrey! you're go'n' too fast, old man. I'm selectman and justice of the peace, and you've got to stop it!" Joel rose in his seat and flashed an open palm on the pursuing father, who paid absolutely no attention to it.

"You won't, eh? Well, I miss fire sometimes, but not when I know the course of a thing." Joel pulled out the revolver and fired.

There was a second noise as of an explosion, and the right fore wheel of the machine of the hot-headed parent flattened down in the dust.

Atherton continued to move through the air, and brought up in the lower limb of a maple tree, where he was wedged helpless, yet not stunned.

Grace screamed; but when her father opened his mouth and began to talk vigorous English, she was reassured.

"We must get him down. I'm afraid he's hurt," said she.

Bacon chuckled. "Grace, don't you know when you're being helped by Providence? Your father's safe. When you are my wife the first thing I'll help you do is to get him down."

"He must understand," said Joel, "that we don't allow autos to make railroads of our highways. There's Abiel now, comin' out of his front door." The machine plunged forward like a belated mail-train. "Ginger and senna! but this is like flyin'! If 'twarn't so expensive I'd buy one of the pesky things myself. Hi, Abiel! Got a job for yer."

MASTER RUSSELL HULL ARMENTROUT, AGE 9 YEARS, THE YOUNGEST CHAUFFEUR IN STAUNTON VA. HE IS THOROUGHLY FAMILIAR WITH EVERY PART OF HIS MACHINE.

holds, where it could be easily gotten at on landing. One of the agents had agreed to carry it uncrated, but an obstacle loomed up at the last moment in the shape of a dock superintendent, who it developed was really a more powerful factor than the manager of the company himself. We argued in vain, with the result that the car was hastily, though thoroughly, boxed on the dock at a cost to me of only about thirty-five dollars. Under ordinary circumstances to crate a fully equipped touring car costs from sixty dollars to one hundred dollars. The price for the same work is considerably less in France.

The rate from Boston to Naples at the time was twelve shillings sixpence per ton of forty cubic feet; it has since been raised to twenty shillings on all important lines sailing to the Mediterranean. At the old rate, my car cost thirty-six dollars, which did not include lighterage from the ship to the wharf, in Naples, amounting to about five dollars more. The cost of getting it through the custom house is not very heavy, but I thought it ridiculously slow and full of red tape, until I had experienced the hold-up on one's return to his native land. There was a tax for stamp, and another for *guardia*—a gentleman in uniform who stared vacantly at the car for two hours, and saw that the Neapolitan wharf rats didn't run away with it. Then a charge of two dollars for issuing the license, another of about three dollars for keeping the office open after hours in order to issue the license, then the license itself, permitting me to drive where I wotted in the King's domain, and finally the duty, which amounted to twenty-five dollars in Italy, and one hundred and twenty-six dollars in France, remitted in both cases on crossing the frontier.

The duty is based on the number of springs in Italy, and on the weight of the car in France; in the former case a leaden seal is attached to one of the springs, and another to the steering wheel, and they must not be disturbed or tampered with, if the owner expects to recover his money on leaving the country. Most drivers declare their c[illegible] considerably under weight on enter[illegible]rance, to make the deposit as smal[illegible]ssible, though all of this annoyance [illegible]e avoided if one is a member of the A[illegible]omobile Club of America, which has established reciprocal relations with the Touring Clubs of both countries, allowing many privileges, and the special price for their valuable books and maps.

The car went through the Italian *dogana* in about three hours; they kept it in the New York Custom House, on our return, for over two weeks and the crate disappeared entirely, though I had distinctly stated that I wished it kept for use another year. I had shipped it by steamer from Naples to Antwerp, then we changed our plans, and it was given a boat ride back to Havre to await our sailing. It had been so constantly in my thoughts that I really became attached to that crate.

For equipment, we carried a trunk on the platform at the rear of the car held in place by straps running fore and aft and from side to side, through iron clips screwed to the floor. There was room for a deck basket between the trunk and the seat, in which we carried four extra inner tubes, ponchos, waterproof caps, guide-books, wraps and articles that we wished to have easily accessible.

We strapped a suit case on top and a long box was placed on the footboard on the right side of the car, fastened by lock and key. In this we carried the heavier tools for repairs and adjustments, a jack, a rubber pail, which we found most useful, extra spindle bearings and spare parts packed in waste, oil and grease, carbide for the generator, tire-repair kit, pump, oil cans, files, etc.

You can buy gasoline anywhere in France, but for long runs through the mountains in Italy I found it necessary to carry a five-gallon can strapped to the board in front of the tool box for use in emergencies. The smaller parts were stored under the seat, a complete supply of extra bolts and nuts, and chamois for straining the gasoline, extra spark plugs, vibrator springs, contact points, coils of copper wire, spanners and other tools. Except for the balls, cups, cones, etc., of the bearings, we carried no heavy extra parts, like connecting rods, spokes or extra gears.

We hung two extra shoes on side irons at the left of the car, and the odometer showed only on the wheel, where it wasn't half so useful as the more expensive ones on the dash. I added a searchlight to the usual lamp equipment, which we found of the greatest service on the winding roads in the hills, where it could be operated from side to side to pick out the curves long before the car reached them. I had a sprag attached to the front axle, which could be dropped from a hook on the dash; we seldom found use for it, but on one occasion it held when the brakes didn't, and probably saved us from trouble.

It is rather hard to determine what of these extras would be found most useful; we were unusually fortunate in escaping serious breaks and accidents. Our tour began at Naples, and ended at Havre, a total distance of 2,323 miles, through Rome, Foligno, Gubbio and over the Appennines to Pesaro and Rimini, which is the end of the Via Flaminia, the ancient highway

on that day's run, we were blocked by a contestant, who looked much worried. I thinking of some automobile term which I heard the boys speaking about sometime or other, I shouted, "What's the matter there, Brother, carbureter trouble." "Oh, no," he remarked, "just fire trouble." "Well," says I, "as long as you dont get spinal meningitis your all right." Abbott gazed around after that and said "Cheese it, old man, that's the time you put your foot in it."

The Olds Quartet reached Rangeley on schedule time. One of the hardest day's run so far. Everybody found everybody else asking everybody, "How did you come through."

An extra day was spent at Rangerley Lakes. The bunch was very much pleased with the spot. Fishing, hunting and canoeing was plentiful. Everyone enjoyed themselves immensely while at the lakes.

Friday evening at the hotel, a quartet was selected from the automobilists, some dandy singing was heard. Mrs. Cecil S. Eustis sang "In My Merry Oldsmobile," with two dozen encores.

Saturday we were off for the last day's run to Bretton Woods, N. H. Thirteen perfect score cars were the first to start. Ernest Keeler was fifth in line with his perfect Olds full of confidence. Even if the officials said they were going to make that run a severe one. How the crowds did cheer Keeler taking into consideration, that the Oldsmobile was the cheapest car in price, in the perfect score list. The performance was therefore all the more remarkable.

Keeler reached Bretton Woods, passing two of the cars that started before him on the way.

After a day in the White Mountains, I swung aboard a train, headed for old New York and the road once more, and I want to say right here, boys, after 1,200 miles in an auto, there's nothing to beat it for travel. I've done my full 100,000 on the steel rails, but give me the good old rubber shod gasoline buggy for mine.

After figuring all out, I have proved to my own satisfaction at least that with an automobile I can cover my territory in six months and spend the remainder in Gay Paree.

Well, here's hoping that the Olds Motor Works will allow me credit for a 1907 Oldsmobile—I might be persuaded to accept a runabout if it could do the remarkable work the "What's Wanted" car did.

Steer Roping—New Style

Accomplished in Record Time--But Exciting While It Lasted

From Motor World.

PURSUING a steer from a standing start across a large arena, roping, throwing and tieing it in the remarkably short time of thirty-one seconds, is a record that stands alone in the history of the motor car.

This was accomplished in the full view of thousands of spectators at the last convention of the National Association of Cattlemen held in Fort Worth, Texas. The performance was the outcome of a bet of $500 between two wealthy cattlemen of the State, one of whom was an automobile enthusiast, having unbounded confidence in the ability of the motor car.

C. J. Corkhill was attending the convention in the interest of the Oldsmobile Company, and was induced by the cattlemen to make the attempt, and tells of its accomplishment as follows:

"The first that I knew of the idea," said Mr. Corkhill, "was when E. B. Walters and A. H. Wharton talked about the relative merits of the automobile and the pony. Walters was saying that the machine could not be used on the ranch and consequently it was of no use to him. Wharton, who has owned an automobile for several years, replied: 'Now, I know better than that. You can catch and rope a steer just as well with a bubble as with a

JOSEPH SHAW OF WINNIPEG, WITH THE FIRST OLDSMOBILE PALACE TOURING CAR SHIPPED BY THE CANADIAN FACTORY OF THE OLDS MOTOR WORKS

ROPING A STEER FROM AN AUTOMOBILE.—THE STEER DOWN.

ROPING A STEER FROM AN AUTOMOBILE. THE FINISH.

a foot race. The driver should acquire the habit of removing his foot from the throttle pedal almost automatically whenever an emergency arises, or when for any reason the clutch is thrown out and the motor allowed to run free without pulling a load.

In this way the power and speed of the engine is cut down, with scarcely a thought from the operator.

The Use of the Throttle.

In use on the road the foot pressure on the throttle will vary, and, at all times, it should be held open just enough to give the gas necessary to carry the car along at the speed desired by the operator. In connection with this throttle which at times, is operated by a lever on the steering wheel instead of by a foot pedal, it is necessary that the operator understand the handling of the spark lever. This is invariably found on the steering wheel, and, by a movement either right or left, the spark is advanced or retarded. This one thing should be borne in mind. Spark is speed and gasoline is power. Therefore, when the car is running along on level roads without any great amount of work to do, the spark may be advanced to hold the speed and the gasoline cut down. When the roads become rough or hilly the gas should be gradually opened to meet the advanced spark, and then if the engine pounds as it goes up a grade it is often possible, by opening the gas wide and slowly retarding the spark, to make it pull the car over the crest of a hill without a change of gears and without a serious pound.

In the control of the spark lies the opportunity for the exercise of the greatest judgment on the part of the operator. Eventually the spark on all cars will be automatically controlled, but, for the present, such is not the case and there are hundreds of drivers who have been able to overcome every other problem of automobiling, but who have never been able to regulate the ignition properly to secure the best results. A greater part of all auto engine's troubles are due to the effects of poorly handled and regulated spark levers.

In ordinary practice a passable result can be obtained by setting the throttle at a certain position and then advancing the spark as long as the car continues to gain speed, stopping when the motor begins to slow down and labor. To the trained ear the sound of the engine exhaust is an indication of the correctness of the spark position. A loud and prolonged exhaust indicates a late spark, while a very light exhaust coupled with a tendency on the part of the motor to slow down and pound is a sign of too early ignition. It is only by constant practice that the driver of an automobile can eventually learn just what his engine will do at various positions of spark and gas, and he eventually comes to regulate these important levers automatically and without thought, changing them as the road conditions vary and following no rule other than the action of the motor.

It is obvious that when the motor slows down under hard work on a hill that the ignition should be set at a later point, or, in other words, retarded. As regards the action of the motor on hills, generally speaking, it is better to allow the motor to run at constant speed and to change gears rather than permit the engine to slow down and pound on the high gear before dropping back to the one next lower.

On the Road.

Feeling sure that he has mastered the control of the engine the novice is now ready to start out on the road, and at this point it becomes essential that he be fully cognizant with the operation of changing gears, of starting and stopping the car and of steering it.

Before starting the engine, the novice should see to it that the gear lever is set at the neutral point, and that the brakes are set so that the car cannot start unexpectedly, and he may then take his seat behind the wheel and prepare for journey on the highways.

On the floor of the car at his feet he will find two, or perhaps three, foot pedals or levers which operate the brakes, the clutch and the accelerator, respectively. The brake is almost invariably on the left, the clutch pedal next to it and the accelerator on the extreme right, and in many cars provided with a sedgement so that it may be set at a certain position and will remain there until changed.

It is highly essential that the functions of all three of these pedals be clearly understood. The clutch pedal may be of the push or of the piano type, these two varying only in as much as to operate then one is pushed down and the other forward. When the clutch pedal has been pushed to the extreme limit of its motion, the engine is disconnected from the transmission gear and may run free without moving the car. The accelerator opens the throttle wide and prevents the governor from acting, the result being that the motor if disengaged from the transmission will race violently or if the accelerator is pressed down and the engine speeded up before the clutch is engaged, the car will start with a severe jerk that is destructive to both tires and mechanism.

It is advisable to cover both clutch and brake pedals with leather, or some other substance, so that there will be no possibility of the feet slipping off them.

J. P. SCHNEIDER AND PARTY STARTING ON THE FIRST CENTURY RUN UNDER THE AUSPICES OF THE DETROIT AUTOMOBILE

To Start the Car.

Having placed himself in a comfortable and uncramped position, the driver is ready to start his car. He should sit with the heel of either foot on the floor and the ball of the foot resting lightly on either pedal, never changing this position while the car is in motion, for were he to have to pull up suddenly he might confuse the pedals and cause trouble. In some cars the action of putting on either the foot or emergency brakes disconnects the clutch and obviates this danger.

Having mastered the operation of the foot pedals, the beginner is ready for the speed change lever which is found close to the right hand and on the outside of the body. It is in the proper handling of this lever that the novice will find his greatest difficulty, and this once overcome he will be free and confident in his mastery over his car.

If this clutch lever is set at the neutral point the driver should remember never to move it without first disengaging the clutch by means of the foot pedal. To move this lever without first throwing the clutch out might mean a tearing out of gears, or an even more serious accident were the car to start ahead suddenly and unexpectedly.

It will be noticed that this lever works either on a quadrant with a number of notches in it, or in a slotted quadrant like an H.

In the former case the rear notch will be the reverse, the next the neutral point where the lever now rests, and then the first, second, third and (if fitted) the fourth speeds in the order named. If arranged on what is known as the "gate" system, the neutral point will be the neck of the H, each of the four extreme points of the slot giving a different speed. In this selective type of gear there is frequently a third slot for the reverse, and this is guarded with a safety catch to prevent it being entered accidentally. It may be plainly seen that if in changing gears from high to second speed with the car traveling thirty miles an hour or more, if the reverse was engaged, the strain would be terrific and the transmission gear would probably be torn out. Great care should be taken then to see that this safety latch is always closed down after the reverse has been used.

Outside of the speed change lever will be found the emergency hand brake fitted with a sedgement and ratchet which holds it either by pulling toward the driver or pushlocked at any given point. This is operated ing away from him according to the idea of the maker, and in most cases automatically disengages the clutch.

The Influence of the Automobile

And How it is Changing Social Conditions.

By Anne Rittenhouse

From Amsee's

RICH man's toy is becoming the pivot of one of the most remarkable social changes America has experienced. Man and his motor-car are altering the face of the map. Yesterday we were caling it the luxurious fad of the millionaire. To morrow we will recognize it as the necessity of the many.

It is the final answer to that disturbing question: "Is the American home life disappearing?"

It gives the final "No" with emphasis, and backs the negation with facts.

And isn't the tendency logical? Since Adam and Eve hid in the cave, the household instinct was strong in man up to the time when it looked as though it would be squeezed out of him in the canons of a great city.

The flat-dweller was a necessity, not an evolution. The real man still yearns for his home in the open. As long as he had to be a strap-hanger he preferred a flat. But with the advent of the motor-car came the vision of a new life. The fireside was safe from that hour.

The automobile is the one magnificient tie that connects the country to the town. Thousands of men and women who have

dropping a perpendicular onto the pressure line from a point where a perpendicular directed from the known volume intersects this curve.

In other words, suppose we wish to find the corresponding pressure for a volume of 40 cubic inches: First erect a perpendicular at 40, and from the point where this line intersects the curve, drop a perpendicular on O Y. The point at which this line intersects O Y represents the desired pressure. You can readily see that if an apparatus could be devised which would make the engine draw these curves automatically, that the result would be a picture of just what was occurring in the cylinder at every portion of the stroke. (Of course, you have probably realized that the curve which we have just plotted

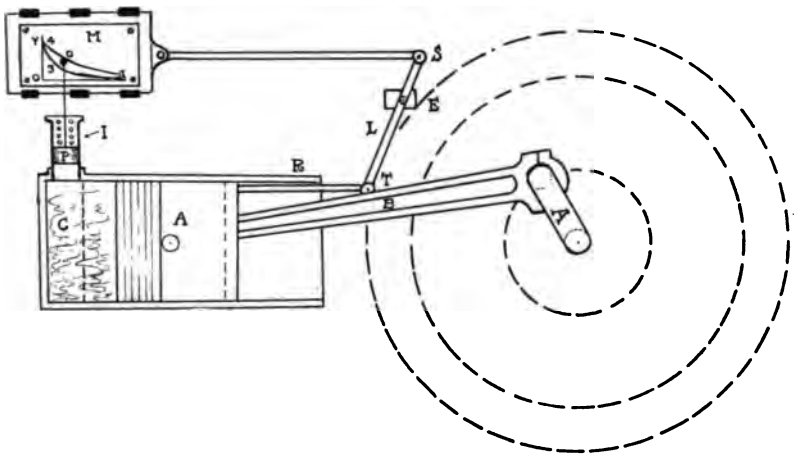


FIGURE 84.

DIAGRAMATIC SKETCH SHOWING METHOD OF OBTAINING A GRAPHICAL REPRESENTATION OF CONDITIONS INSIDE THE CYLINDER BY MEANS OF THE "INDICATOR."

is practically the compression curve of the motor. The three other strokes may be plotted in the same way). This is what is actually done.

THE INDICATOR.

We will first study a simple form of the apparatus and see how this is brought about: C is a cylinder; A a piston working in same; D crank shaft; B the connecting rod; L a lever pivotted at E and operated by rod R fastened rigidly to the piston; M is a flat plate which may be moved horizontally back and forth, being kept in a straight line by guides along the top and bottom; I is a small tube screwed into the cylinder proper inside of which moves a small piston P. On top of this piston is a rod fixed rigidly to it, and carrying a pencil at its upper end.

Let us suppose that the pressure in the cylinder is allowed to remain at atmospheric pressure, and that the piston moves back and forth in the cylinder, then you will see that if a sheet of paper is pasted on the plate M, and pencil point Q adjusted so that it touches the paper, a horizontal line will be drawn, the length of which is proportional to the stroke of the piston, this

always longed to live in the country could not be persuaded to depend on suburban trains, and refused to spend so many hours of their livess with a watch in one hand and a railroad schedule in the other, To them the automobile has come as a bow of promise. They know that country life is now possible. The ring of a bell and the motor is at the door, the chauffeur waiting to take them wherever they wish. There is no consulting of time-tables nor scrambling for seats.

It makes little difference what hour of the day or night one wishes to travel, so the roads are good. The world is yours if you have an automobile.

The suburbanite is no longer obliged to decline an invitation to a theater-party in town or to a dinner-party fifteen miles away up the road, nor must he dress hours before the time appointed in order to catch a certain train. Thus, for those who would be of the world, but not in it, the automobile removes one of the greatest obstacles to residence in the country.

It used to be a bit awkward to have a dinner invitation for eight o'clock in town and be forced to take a train which left your country town at half-after six and arrived in the city a quarter-past seven, necessitating either a dreary forty-five minutes' wait in the station, with all the loungers gaping at your evening clothes, or reaching your hostess' house nearly an hour before time, to linger aimlessly in the dressing or drawing-room while the latter made her toilet.

Hundreds of people preferred to decline invitations which occasioned so much inconvenience and put them at such a disadvantage.

But things have changed. Invitations are made and accepted with the automobile as the controlling factor. Be the car expensive or cheap, be it large or small, it at least can make the run quicker than a local train, and with far more pleasure and comfort.

Women no longer soil their evening gowns on the dusty seats of the suburban train. The most costly frock may be worn with security. There is no trailing in the dirt, no cushions, that millions have sat upon, no crushing, no tearing. Gowns can be as carefully arranged as in a brougham, and their wearers kept as warm and snug as by their own firesides.

Moreover, people who would not think of allowing their horses to be subjected to the stress of an American winter, or submit themselves to the annoyance of a cold drive to the station, have no scruples about this snorting affair of iron and steel.

With luxuriously comfortable cushions of limousine leather, and with glass to protect from the force of the wind, even the late coming home, formerly the suburbanite's greatest horror, is made a thing of genuine pleasure.

Instead of hurrying out of the play and opera before the last act to catch a suburban train, the man with the automobile enjoys the full price of his ticket, and can go with unruffled complacency to a little after-the-theater supper, for he knows that his retiring hour will not be materially delayed.

Even the joys of country house-parties can be given the additional spice of urban dissipation, and be transported bodily into town for social diversions.

To the business man, the automobile has come as a veritable *deus ex machina*. The toil in the office must still be his, yet he has but to step into his motor-car at the end of the day, take an inspiring spin over a stretch of good road, and the recreation and relaxation of life in the country are realities.

Financiers, captains of industry, political leaders, who rarely dare to be out of reach of the office, have heretofore clung to city life for many of the months of the year, because they could not afford to be dependent on trains in cases of emergency.

To-day they live the life of the old planters, knowing that the ring of the telephone can be answered by a swift run to the city, with little time lost.

No one realizes the extent of the family exodus from town more than the apartment-house builder. Daily he offers novel and marvelous inducements to keep the urbanite within his walls. He erects buildings *de luxe*, with a garage on every floor large enough to store several automobiles and to lodge the chauffeur. An enormous elevator hoists machines and occupants to their respective stories. But all to little purpose. The people are awake to new prospects; the scope of their vision no longer is narrowed down to a dull stretch of city pavement. Henceforth, there must be vistas of blue sky and waving treetops and grassy lawns.

It is not the rich only that have taken so eagerly to the automobile, as statistics go far to show. Last year twenty-eight thousand cars were built and sold in the United States. During 1906 one of the leading manufacturers of automobiles prophesies one hundred thousand cars will be sold. What does that mean? Simply that the toy of the rich is a toy no longer. It is a necessity. The man of moderate means finds it cheaper, more wholesome, and more satisfactory to own his motor-car and live outside of the big cities.

More than that. The plan on foot for three or four men of small means in subur-

a flat plate is placed on a drum, and the drum revolved by connecting a cord wound around it to some point on the engine which will give you a movement in the same direction and proportional to that of the piston. The inside mechanism explains itself. The spring used to counteract the effect of the pressure on the indicator is calibrated so that each inch of compression represents a certain number of pounds per square inch. For instance, a sixty-pound spring would compress exactly one inch for every sixty pounds pre square inch pressure in the cylinder.

A straight line movement transfers the up and down movement of the

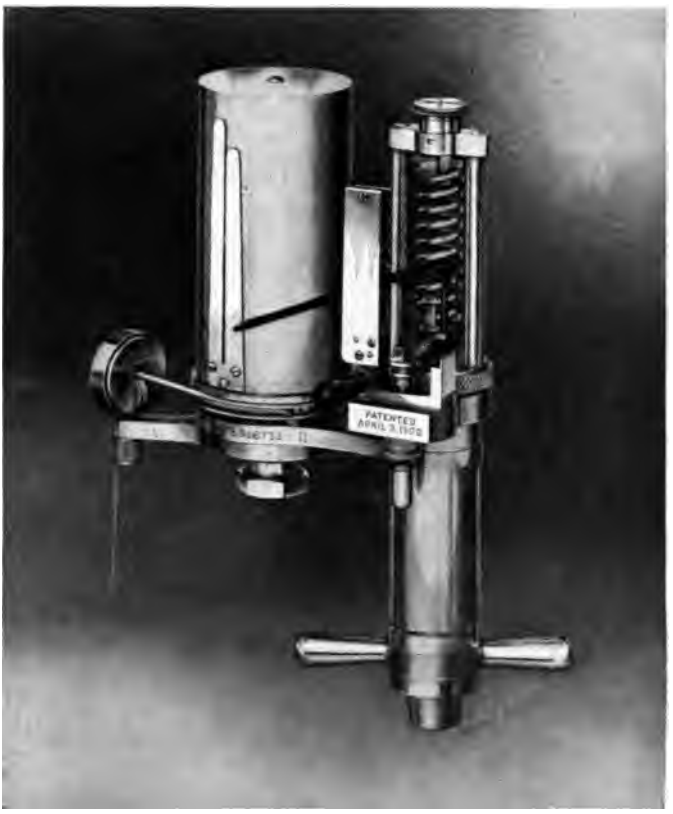


FIGURE 86.—INDICATOR WITH OUTSIDE SPRINGS.

indicator piston to the pencil point, so that you see in principle the apparatus is simply a modification of the first mentioned system.

THE INDICATOR CARD.

Now that we have the indicator card, you will ask what purpose it is to be used for? As an answer ask yourselves a few questions like the following: How high is the compression pressure? What is the maximum pressure of explosion? Does the muffler produce back pressure? Are the valves open-

Keeler's Clean Score

How the Winning Oldsmobile in the Glidden Contest was Driven from Bretton Woods to New York City—505 Miles in 21 Hours and 30 Minutes Without Stopping Motor

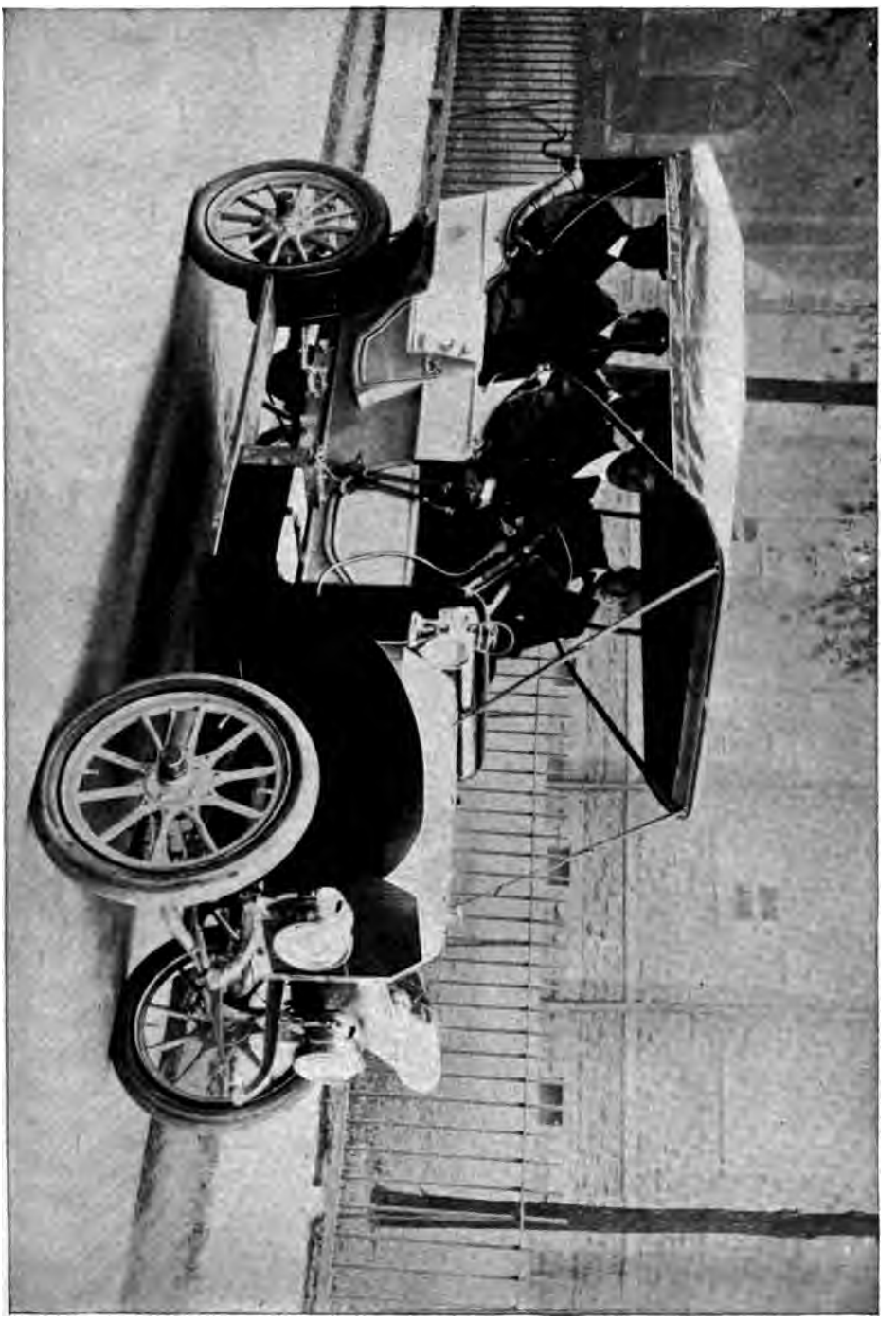
From the Detroit Free Press

Throughout the Glidden tour more attention than was given the average clean score car was attracted by the 28-30 h. p. Oldsmobile, No. 51, driven by Ernest Keeler, who is to drive the Oldsmobile Vanderbilt cup car. The performance of this car and its crew throughout the contest was remarkably in every respect. Not satisfied with having a clean score with the 12 other cars entitled to the Glidden cup, Keeler drove his car from Bretton Woods to New York, breaking all records for this class of work.

The start was made from the Mount Washington hotel at 12:10 on Sunday, the official start being made by Messrs. Augustus Post and P. Deming of the A. A. A., and the time being given by Chas. J. Glidden, who started the car. The first stop of the trip was made at Plymouth, N. H., where 15 minutes were spent in securing gasoline. The motor at all these controls was left running under guard, at the direction of the official observer, Mr. De Bear. At Concord one hour was taken for supper and gasoline. At Nashua 10 minutes were taken for gasoline. After leaving Nashua it started to rain and poured incessantly for nearly seven hours. At Worcester one hour and thirty-three minutes stop was made in order to secure something to eat and to wake up a garage man for gasoline. Dry clothing was secured for Mr. De Bear, who was unfortunate enough to be without a raincoat. Between Worcester and Springfield the direct road was lost and a detour around a small mountain was made of twenty-five miles before the main road was recovered. Ten minutes for gasoline was spent at Springfield. At Hartford thirty-five minutes was taken for breakfast and one hour was taken out at Bridgeport for a reception given by the local automobilists, who had received word of the trip through Worcester. New York was reached at 2:28, making a total of twenty-six hours and eighteen minutes, with an elapsed running time of twenty-one hours and thirty minutes for the 505 miles of the trip. Several short detours were made on account of the loss of road, averaging three to twenty miles.

The remarkable part of the run was the staying qualities of Keeler, who drove the entire distance, with the exception of from five to ten miles, when he turned the wheel over to H. T. Clinton while he managed to eat two sandwiches. Not once during the trip was the motor stopped or adjusted and the hood was not raised except on one occasion, in which to oil.

Another feature of importance was the fact that the car made the entire run without the replenishing of water. At Bretton Woods the car was filled with gasoline, oil and water. During the run it consumed two gallons of oil and thirty-five gallons of gasoline and upon estimation it was found that less than one gallon of water had been used.



Motor Talk
A Magazine of Out Door Sports

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The Autoist's Reading Table

Under this heading we will review new books of interest to our readers.

"Automobile Fun" (New York, Thomas Y. Crowell & Co., price $1.00). This book is intended solely to amuse and is well adapted to that end. It is worth a place on any autoist reading table. It is made up of drawings and comments taken from "Life" and those familiar with the high grade work of that publication need no further recommendation as to the quality of the book.

"Automobile Road Map of Southeastern Michigan (Detroit, Silas Farmer & Co., price $1.00). This road map is arranged for convenient handling, is mounted on heavy cloth and is well adapted to the requirements of the autoist. It is acurate—an indispensable quality.

"Krausz's Practical Automobile Dictionary," (New York, Frederick Stokes & Co., 16mo., leather with flap, boxed, postpaid, $2.05). The book gives in English, French and German 12,000 technical terms and other words used in connection with motor cars and motoring as well as the frontier regulations for foreign automobile travel in Austria-Hungary, Belgium, Canada, Denmark, Germany, England, France, Greece and all the other countries where motoring is possible. There is also a list of the consulates in Europe; cable rates from New York and London to foreign countries; tables of metric weights and measures; comparative tables of weights, of lengths, of liquid, surface, and of cubic measures; and finally, one giving the approximate values of foreign coins. If you are a manufacturer of automobiles, a repairer of automobiles, an automobilist, a friend of automobilists, a would-be automobilist or a would-be friend of automobilists, this dictionary will be of value to you.

The book is bound in leather, of a size small enough to slip into the pocket, and has a pocket into which a tourist may put maps and similar matter.

"Motors and Motoring," by Henry J. Spooner, C. E., (New York, Dodd Mead & Co., price 50c net). This book is written with the object of assisting beginners who require useful information relating to motors and motoring, an aim which the author has skillfully attained. The type is large and readable the diagram comprehensive and the text is easy of comprehension by the beginner. Taken all in all this is one of the best books on the subject which has as yet come to the reading table.

A Booklet that Fills the Bill

From Automobile.

The automobile manufacturer is fast learning that the highest class of advertising does not consist of standing on the corner and shouting, "I am the best and only!" but of instilling into the public mind what the automobile really is from a mechanical point of view, how it is made and how it should be taken care of—in other words, educating the public up to the automobile, just as it has been educated up to the horse. A striking example of educative advertising is found in the booklet recently issued by the Olds Motor Works, of Lansing, Mich., under the title, "A Busy Man's Textbook of Automobiles." Beginning by explaining the operation of the four-cycle motor, the book carries the reader to each part of the modern automobile, explaining its construction and functions and illustrating every step with half-tones and line engravings. The illustrations are made from the parts of Oldsmobile cars, but this fact is not brought forward; in fact, the word "Oldsmobile" does not appear in the title page or in the text until the last few pages are reached, where descriptions of the Lansing factory and the Oldsmobile cars occupy a small part of the book. The descriptions consist of plain, unvarnished statements of facts, without comment or expressions of opinion. The book contains forty-eight pages and the press work is of the highest class. Altogether it is a credit to all concerned in its production.

The Autoists' Reading Table

Under this heading we will review new books of interest to our readers.

The new poster of the G. & J. Tire Co., of Indianapolis, Ind., is a departure from the ordinary, and is very attractive and artistic. It brings out in pleasing contrast a modern party of auto tour-

ists with an old English inn and coaching party. The scene is true to life, and indicates just what quaint and interesting places one may find at the present time in old country travel.

"Roadside Troubles of the Automobilist."—The American Motor League has just issued, for the use of its members, a convenient little automobile hand book under the title, "Roadside Troubles." It explains in plain words the power used in driving motor vehicles; the nature of gasoline and how it should be used and stored. It points out the causes and remedies of common motor troubles, giving directions for starting and operating the motor car under various conditions, tells how, when and where lubricators should be applied and what lubricators are best; treats of the different causes of imperfect combustion and troubles with sparking apparatus and ignition circuits; it reviews in a plain, practical way the various reasons and remedies to be considered when the automobile "won't go." It gives proper space to the subject of wheels and tires and to those general features of construction upon which the vehicle must depend for strength and durability and for the comfort of the operator. The subject of carbureter and vaporizer troubles is treated in a separate chapter and practical methods for correcting rich and poor mixtures and for avoiding the flooding of the gasoline engine.

"Roadside Troubles" was written by Charles E. Duryea, one of the most skillful and experienced of American automobile experts, and the book will doubtless be largely circulated. It has twenty chapters, and every page is filled with terse, meaty and valuable information.

Each member of the American Motor League receives a free copy of this book. A printed circular describing the book and its contents will be sent to any person who will address American Motor League, Vanderbilt Building, New York.

"His Automobile or Theirs?" It is only in fiction that the motor-car of today invariably breaks down. Those who have grown weary of automobile stories because this musty plot is always used are recommended to read the complete novel by Elizabeth York Miller, which opens the September Argosy. It is bright, lively, full of incident and interest, and there is not so much as an exploded tire from beginning to end.

HOW ROCKEFELLER CAME TO BUY AN AUTOMOBILE.

R. R. Owen, the Cleveland automobile dealer, tells how John D. Rockefeller purchased his first auto.

"After repeated efforts I finally got Mr. Rockefeller interested to the extent of a demonstration," said Mr. Owen. "At the time appointed I drove to his house in an Olds runabout. Mr. Rockefeller ordered out his best team and followed about a hundred feet behind me, while I drove up and down hill for a five-mile demonstration. At times he urged his horses to their utmost, but I always kept just far enough ahead. On the return to the house he asked me rather anxiously how much gasoline I had used, and when informed of the small quantity he ordered the machine delivered at once. Since then I have sold him two other machines of the same type, but have had to take the old machines in exchange, allowing him a substantial amount for them."

Motor Talk

[illegible] it is not [illegible] its limitations [illegible] to do more [illegible] it invited [illegible] of less.

[illegible] lights are agitating [illegible] legislature of a [illegible] test to indicate [illegible] with regard to [illegible] are suggested [illegible] either automobile [illegible] intensity are. The [illegible] light would [illegible] a car going [illegible] repeated [illegible] often as [illegible] night two [illegible] and for [illegible] test for [illegible] last.—Ex.

[illegible] OLDSMOBILE

[illegible] is the title of [illegible] which is [illegible] The [illegible] quite [illegible]

[illegible] has an Oldsmobile—
[illegible] the girl
[illegible] his machine.
[illegible]
[illegible] a spin, you know,
[illegible] so
[illegible] gets her ear
[illegible]

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible] like with me
[illegible]

[illegible] in the dark old park
[illegible]
[illegible] why the motor goes—
[illegible] awfully strong.
[illegible] spoon to the engine's tune—
[illegible] will happen soon;
He'll win Lucile with his Oldsmobile.
And then he'll fondly croon:

CHORUS:—

—Motor Field.

[illegible] speed [illegible]
[illegible]
[illegible] wheel [illegible]
[illegible] bedding, and rei[illegible]

It [illegible] requires a day of [illegible] of hard work. As long [illegible] good condition it is never [illegible] as the speed of a horse.

MOTOR TALK

A MAGAZINE OF OUTDOOR SPORT

OCTOBER, 1906

AS PROOF CONCLUSIVE—the

OLDSMOBILE

Offers ten, and more, convincing reasons (actual facts) why it is the most economical to buy—the most satisfying to own—and why you *drive a winner when you drive an Oldsmobile.*

First. All the qualities essential in touring demonstrated by the Perfect Score made on the Glidden Tour in competition with cars costing double its price.

Second. The 505 Mile Non-Stop run made by the same car from Bretton Woods, N. H., to New York City, without any adjustments or alterations, immediately after completing the Glidden Tour. The run was made through *rain and mud* in the record time of 21 hours and 30 minutes, under the official observation of the A. A. A. Committee.

Third. Brake reliability demonstrated in winning the brake contest at the Open Air Show in New York.

Fourth. Vibration test won at Open Air Show by carrying a pail of water, brimming full, on the tonneau floor for 200 yards from a standing start, spilling but [illegible] of an inch on the way.

Fifth. Motor endurance — demonstrated by the 100 hour non-stop test made in Chicago.

Sixth. Motor endurance — demonstrated by the 200 hour non-stop test made in Detroit.

Seventh. Motor endurance—demonstrated by the 100 hour non-stop test made in Cincinnati.

Eighth. Hill climbing ability—demonstrated at Crawford Notch, Mt. Washington, Twin Peak Hill Climb, California, and the New York-Poughkeepsie run.

Ninth. Roadability—demonstrated by the 75 mile run from New York to Poughkeepsie over difficult hills and trying road conditions with the *high speed lever sealed in.*

Tenth. The records of the past five years made in this country and abroad.

And further reasons furnished by the "man at the wheel"—ask him, or write us for details of any of the above. **Address Dept. M. T.**

Member of the National Association of Automobile Manufacturers

OLDS MOTOR WORKS
Lansing, Mich., U. S. A.

Canadian trade supplied from Canadian Factory. Packard Electric Co., Ltd., St. Catharines, Ont.

CONE

CONE WITH ROLLERS

CUP

Increase Your Horse Power

You can do it without developing a new and larger engine. Fit you wheels with

TIMKEN ROLLER BEARINGS

They remove one big element of friction, and it is friction that "eats up" power. Timkenless axles consume a lot of it.

Horse Power, **from the standpoint of road usage,** is not all a matter of stroke and bore. One of the reasons the Oldsmobiles deliver all of their power to the rear wheels is because they use "**Timken**" Bearings throughout.

Timken Roller Bearing Axle Co.

CANTON, OHIO

More Selling Power

The automobile manufacturer who desires to increase the POWER of his machine finds it a comparatively easy matter. He consults his designer or engineer, and following certain well-established laws of mechanics, the necessary changes are made and the additional *power* follows just as surely as night follows day.

The designer knows just what is to be done. He is sure of results because he is handling forces with which he is familiar and over which his training and knowledge give him control.

But how will you get more SELLING POWER? How can you "speed up" your business to the point you think and know it ought to reach? How can you increase your sales—your profits?

Will you attempt to solve the problem unaided, or, will you call in those whose training, knowledge and experience fit them to secure the desired results by methods as definite and sure as that of the automobile engineer?

Our organization has been built on the strength of practical results obtained for our clients. We have helped many manufacturers increase their SELLING POWER and are in a position to serve a few more. Do you want to increase the SELLING POWER of your business? If you are interested write us; we will be glad to correspond with you or call in person.

BROWNELL & HUMPHREY Advertising

Brownell & Humphrey

Advertising Agency

90 Griswold St., Detroit, Mich.

U
CT 19'06

"Are-and-be"

Flat-Opening Detachable-Leaf Ledger

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KEELER AT HORSESHOE TURN AT OLD WESTBURY ON THE VANDERBILT COURSE.

Motor Talk

A Magazine of Out Door Sports

VOL. II. OCTOBER, 1906 No. 10

American vs. Foreign Cars

Mr. F. L. Smith, of the Olds Motor Works, Takes Issue with Mr. A. W. Church as to The Results of The Glidden Tour

Editor The Automobile:

IT is a deplorable fact that the conditions of this year's A. A. A. tour for the Glidden Trophy gave us no result that was worthy of consideration to either a manufacturer, agent, or buyer. The statement by anyone that the American cars made a creditable performance, to the contrary, was not so. I do not wish to depreciate the merits of the winner, or winners, but by comparison to foreign cars the equation is entirely lost. It is apparent to me that the purchaser, to insure safety and consistency in automobile construction, must pay the standard price established by the foreign market; for, eliminating the cars costing more than $4,000 in the Glidden tour, a technical committee would have been at a loss to know to whom to award the trophy, had there been such a condition surrounding the conclusion of the run. The famous painting of the "Last Roll Call" was not a circumstance to the shattered and disabled condition of the worn-out, battered, and much-abused mechanism that rolled into Bretton Woods, July 28.

This statement I must qualify by saying that early in the contest I stated that the conditions of this year's contest were nothing more than an invitation to wreck a car, and the result fully warrants the statement. Although very much interested, and watching with great concern the products of the American market, there is not a question of doubt in my mind that the foreign cars in their performance during this run gave conclusive evidence that we have much to accomplish in the refinement of detail to compete with the foreign product.

The Darracq made a perfect score under Mr. Stevens' direction. The penalty of 14 points was the result of an error of the guests in the car, owing to the confusion brought about by the changing of the time to be spent at Rouse's Point for the clearance of customs papers, who directed Mr. Stevens to pass the checker 7 minutes ahead of his regular time. Other than this, the Darracq went through with a clear record and completed the run to New York without a single adjustment of any character in the entire time.

The Clement-Bayard suffered its penalization from the delay occasioned from an accident that, had any car in the contest met with similar unlucky circumstances, would have been practically eliminated from proceeding on its journey, which, however, they repaired on the road in time to join the tourists the following day.

It is not consistent to compare any of the contesting cars with that of the performance of the English Daimler, which had been withdrawn at Saratoga at my suggestion, but the work cut out and the performance of all three cars would make it a very dangerous proposition for any owner or maker of an American car to challenge for a similar contest when all conditions were equal. The foreigner, in his engineering construction, must give more attention to greater clearance for our American roads.

The tire question in a contest of this kind is very important, and it was very thoroughly demonstrated that the tires used today are almost without exception too small for the load they have to carry and the work to be done.

A. W. CHURCH.

New York City.

MR. SMITH'S REPLY.

In common with a considerable number of American manufacturers of motor cars, I read with interest Mr. A. W. Church's letter, which appeared in the *Automobile*, and of necessity I am obliged to differ

with him in regard to the tour this year for the Glidden trophy giving "no results worthy of consideration to the manufacturer, agent or buyer."

It is a platitude to say that cheap and shoddy goods of any kind cannot be sold, even in this wide United States, for *more* than one season, but this fact was and is being emphasized when the agents all over the country come to the manufacturers of American cars and refer to the results of the Glidden tour, stating how valuable a demonstration it was to them, and—if the agent is to be believed—to the buying public.

The agent is constantly in the market for the best goods he can buy and is not always insistent upon the lowest possible selling price in this particular industry, and the agent will tell you that the results of the Glidden tour have allowed him to consistently "talk up" various machines, not only those that finished with a perfect score, but those that performed well and were entitled to something better than honorable mention, and the agent quite as much as the buyer is the man who makes automobile sentiment in this country.

American manufacturers generally, in a communicative mood, would tell you that two years ago they could not have taken their cars over such a road and under such conditions and brought them to Bretton Woods in any condition whatever, but would have contributed to the wealth of various states by scattering vital pieces of their automobile anatomy along the roadways traversed by the Glidden tourists. The manufacturer, buyer and agent closely followed the progress and outcome of the Glidden tour and have drawn their conclusions therefrom, unless the majority of the manufacturers are wrong in reporting the effects on themselves—in which case, of course, Mr. Church would be right in his statement. At any rate, there appears to be reasonable difference of opinion between a number of manufacturers and Mr. Church as to any resultant value of the tour.

To be perfectly fair in the matter of the so-called perfect scores presents many difficulties. No doubt the explanations and reasons given in each case to cover the foreign cars which did not have perfect scores—which is to say, all of the foreign cars that were entered—are correct and fair, as stated by Mr. Church; and equally fair it is to say that a dozen or more of the American cars which were not given perfect scores would have qualified with penalization removed from them ording to Mr. Church, prevented n cars from scoring perfectly; te of a confessedly poor system of scoring—in spite of one or two extremely bad pieces of road, and in spite of stoppages caused by road traffic being congested, which practically affected the cars about equally in the long run, it certainly must indicate *something* when thirteen American cars finished with perfect scores and these cars, with one single exception, are turned out by manufacturers who have been in the business almost since its real start in this country, twelve out of the thirteen belonging to the oldest automobile makers' association in the United States. Mr. Church, of course, is put in the somewhat thankless position of explaining *why* none of the foreign cars qualified with perfect scores, and no one for a moment doubts the reasons he gives for their not arriving at Bretton Woods with the much-desired string of goose eggs indicating the entirely pleasing absence of marks of penalization. It is a trifle questionable, however, to claim in the letter of explanation that the American cars are still behind their foreign prototypes in the face of the final figures. Everybody knows how fast a boat glides through the water, under sail or power, with no other craft in sight, and how beautifully a half-mile horse performs in practice heats on the track—alone. Considering the number of days' duration, and the actual miles of travel, it will hardly be possible to dismiss the Glidden tour as of no value to manufacturer, buyer or agent, or to point out that the American car has a great deal to learn from the foreign car maker, and I think a revision of Mr. Church's letter would probably suit him better if he analyzed the figures more closely.

It is also questionable to have judged the American cars that came through to Bretton Woods on their final appearance only. Mud, dirt, dints, and the marks of wear and tear were, it is true, very much in evidence, but when one considers that outside of the few minutes snatched here and there from the schedule time to clean up and make adjustments—that the entire run was made without the opportunity of going over the motors, adjusting brakes, bearings, etc., the outward and visible signs of grief on the road were very much to be expected. The surprising part, however, is coming to the public when the fact becomes generally known that the cars, whose appearance Mr. Church complains of, for the most part were washed and cleaned and a decent attention given to the motors and were then run home, or to the eastern agencies, under their own power. In the case of one car under $2,500 in price, which came through with a perfect score, the driver, being in a hurry to reach New York, asked the privilege of going through

LAKESIDE TURN ON THE VANDERBILT COURSE.

with his car. The car was checked out by the officials of the tour the day after its arrival without ever having had a single adjustment or a minute spent in cleaning or touching it up, and proceeded to go through from Bretton Woods to New York City without stopping the motor at any time on the trip between noon of one day and noon of the next, through a heavy and continued rain storm and over roads which would not be mentioned with a double star in a guide book. Three other cars of the same make were driven to Boston and New York under their own power and promptly disposed of, and on all the other winning cars—without the entire data at hand—the reports show that most of them started off under their own power and went where they chose. The writer personally was unable to see any notable signs of demoralization among the cars that were lodged in the garage at Bretton Woods.

To sum up Mr. Church's open letter, which is most temperately written and with undoubted sincerity, it is competent to point out, I think, that to offer excuses for all the foreign cars that were in the race, because they did not finish with perfect scores, and in the same breath draw unfavorable comparisons with American made cars, is at once unsportsmanlike and not the very best of good judgment. To anyone who has ever been over the generally fine road system of the Continent and England, it is an interesting consideration as to what showing the entire bunch of American cars that started on the Glidden tour would have made over those roads and under the same conditions that governed the Glidden tour.

Three, or even two years ago, the American car makers would have frankly acknowledged all kinds of motor trouble, and the stoppages for various causes would not have been a minute or two here and there, but would have been hours or days. This year plenty of cars came through, failing to get the "perfect score" for reasons similar to those given by Mr. Church in the matter of the foreign cars, but arriving without a single stop of the motor day in and day out. One car, to the writer's personal knowledge, went through from beginning to end without an adjustment of any kind in the motor, even to the replacement of the spark plugs, but was penalized for reasons similar to those given by Mr. Church in the case of the foreign cars. I do not think that the American manufacturers would be shortsighted enough to make a sweeping statement derogatory to foreign cars,—certainly not as to the material and care with which they were put up, for the reason that the American makers themselves some time ago arrived at the point of using the same material,—that is the very best obtainable,—the foreign analyses of metals having been used wherever they have proven equal or better than the materials obtainable in this country.

As Mr. Church himself very frankly points out, the foreign car maker has something to learn of the condition of American roads, but it is not confined only to the matter of clearance. Stated broadly, the American car manufacturer builds his car for American roads, and were he building for the foreign market only, would have a very considerable advantage over his present conditions: namely, the entire mechanism could be constructed on quite different and lighter lines to meet the easy conditions of almost uniformly good road systems, whereas the car turned out at present by American manufacturers is called on to meet every road variation imaginable.

An American car must make fast time on the occasional good road localities in the East and Middle West, must be able to take mountain roads and deserts innocent of any road except the pathway through the sage brush and cactus, and in short must take its chance of falling into the hands of the American driver under constantly varying road conditions.

The American public is pretty rapidly coming to the conviction that the Glidden tour test, which eliminated all the foreign cars, is at least of some trifling value, and in a less busy season it is quite easy to imagine that should the foreign car makers individually or collectively challenge American manufacturers to enter their cars over the same road and under similar conditions, they would find ready takers. With due deference to Mr. Church's knowledge of the condition and cars, I have endeavored to correct his statement in regard to inferences that not only may be, but are, being drawn from the Glidden tour and its final wind-up.

I think Mr. Church is right about the tire question, and it is quite possible that the tire manufacturers has as much at stake in detail and performance as any car manufacturer, foreign or American. At the same time, in justice to the tire manufacturers, it is only fair to point out that numberless cars came through without the least trouble with their tires, and that a similar performance could not have been had two years ago, showing that the American tire maker has come a long distance with his product and that the finishing touches in wearing quality is about all that will occupy his attention from now on (except possibly the matter of price).

Yours very truly,

F. L. SMITH.

Lessons in Automobiling

A Series of Practical Talks by Harry B. Haines

From Country Life in America.

THE steering wheel is next to be studied and will be found interesting. Either above or below it will be found one, two or possibly three levers whose functions should be clearly understood. One of them opens and closes the throttle and regulates the amount of gas admitted to the cylinders, another controls the spark lead, and a third at times controls the amount of air admitted to the carbureter. In former days this third lever was fitted almost invariably for that purpose, but it is rarely met with now, as most carburetters are automatic in their operation. When once set they are never changed, and they give automatically a constant and correct mixture, adapting themselves to changes in the weather and in variance of the loads. It was found that unskillful handling of the air lever caused difficulty in starting the motor and also caused overheating of the engine, and, for that reason, it was done away with. As a general rule in cars where the air lever is still employed, the air supply should be nearly cut off when starting the engine, and a full supply given when the engine has heated up and the car is running.

The beginner should seek to assume an easy position at the steering wheel, avoiding a low, crouching posture or cramping himself. He should practice to do most of the steering with his left hand, using the right to assist the left in making difficult turns or steadying the car when running at high speeds and at other times to use the horn, and operate the change gear and emergency brake lever.

READY TO START.

When ready to start out on the road the driver should speed up his engine gently, and pressing down on the clutch pedal disengage the clutch. The change gear lever should then be taken hold of and the safety catch pressed down to release it, and it should then be moved forward with a quick and steady thrust and locked in place at the first speed. Many drivers with cars fitted with powerful motors start from a standstill on the high speed, but it is generally advisable for the beginner to start out on the first speed.

The gear lever locked in place, the clutch pedal may be let up slowly and should engage steadily and evenly, starting the car off smoothly and without a jerk. As the machine gains momentum the driver should at once change from second to third speed and from third to fourth, always making it a practice to run on the high gear as much as possible, so avoiding unnecessary speeding up of the engine and consequent friction.

In cars fitted with automatically operating governors it is not necessary to speed up the motor before engaging the gears, as the govenor will take care of the additional load imposed upon the engine on overcoming the inertia of the car.

HOW TO CHANGE GEARS.

The change from the low gear to the second speed will bother the novice for a time. He will either become rattled and fail to disengage his clutch fully before moving the gear lever ahead, causing the gears to crash and grind, or he will shift the gears all right and then fail to let up on the clutch rapidly enough. The result will be that the car will lose its momentum and when the clutch is finally engaged will start off with a jerk, or will stall the motor.

The driver should aim to change gears quickly and without hesitation, and, in the instant between the disengagement of one gear and the engagement of the next higher one, should keep his engine speeded up at about what he considers is the normal speed of the gear he is to use. He will be able to determine this after a little practice but it will annoy him considerably at first. The one essential to remember is to always disengage the clutch entirely and keep it out until the gear lever has been shifted and locked into place. Then the clutch should be allowed to engage steadily and smoothly. In time the driver becomes so expert that passengers in the car are unable to tell when the gears are changed,

[illegible]

WHEN TO CHANGE GEARS.

It is important to know when to change gear and how to do it. How to change gears and, generally speaking, it may be said that as long as the car runs smoothly and quietly on the high gear there is no occasion to change to a lower one; but when a road is encountered that is so rough that the lowest speed obtainable on the high gear is not low enough. When the engine begins to labor perceptibly on the high gear and to slow down, either on a hill or on account of deep sand or mud, the next lower gear should be at once engaged so that the car will not lose its momentum. If the second speed will not carry the car along, the low gear should be engaged at once. It is foolish to risk stalling the motor or impose upon it the additional burden of starting the car up from a stand till by allowing it to lose its momentum by failing to change gears quickly enough. There are some drivers who like to boast that they never use anything but the high gear, but most of them pay for the experience in a racked out machine and increased repair bills.

CLIMBING A HILL.

It should be remembered that it is advantageous at times to rush a hill, starting at full speed some yards before the grade is encountered, in which case the momentum of the machine will carry it along and the high speed need not be disengaged.

In the case of long hills, as the car proceeds up the grade the motor will gradually slow down; the throttle should be kept wide open and the spark retarded, but the moment the engine gives the faintest indi-

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When the top of the hill has been reached the driver of the car must take into consideration the grade to be descended. If there is one and must decide whether or not he is going to allow the car to coast down it or to run down under power. If the grade is a slight one it is advisable to get into the high speed and go down it under power. But if it is a long steep descent conditions are altered and coasting is at once desirable and advisable.

There are a number of ways of coasting, one of which is to put the car on the high speed and, disengaging the clutch, let it coast. If an individual gear system is employed, the change lever is simply set at the neutral point between two speed notches, and the engine is slowed down by retarding the spark and gas until it barely turns over. The car then coasts down the grade under brake control, when at the bottom the engine should be speeded up to its limit, the high speed engaged and the clutch slipped in.

It is the general practice when a very long down hill is met with to throw off the spark, let the engine die down and throw out the clutch. Some drivers shut down the gasoline and throw off the spark but allow the clutch to remain in. The car must then pull the engine over against the compression. This acts as a brake, and the engine is also cooled by taking in unexploded charges of gasoline.

When the bottom of the hill is reached and before the car has lost its momentum the spark should be switched on and the clutch engaged. The engine will then be turned over by the momentum of the car and will resume its activity. Under no circumstances should the low gear ever be used to start an engine this way.

In case of the brakes failing to hold, the engine is a very effective brake, for if the low speed is engaged and the clutch let in with the spark cut off, the car will have to drag the engine over against the compression and as long as the transmission holds, the machine will not be able to gain sufficient momentum to get beyond control.

TWO WAYS OF STOPPING.

On cars fitted with the French system of control which releases the brakes when the

clutch is thrown in, the change from the brakes holding the car to the clutch acting as a brake must be made instantaneously, in order that the machine may not gain momentum enough to be able to pull the engine over against the compression. In most American cars the brakes may be applied and the slow gear thrown in at the same time and these two will bring the car to a standstill unless something breaks, under most any conditions. It should be remembered that if the spark is thrown off and the low gear engaged, an emergency stop may be made at any time. This subjects the mechanism of the car and the transmission to terrific strains and should not be resorted to unless as a matter of last resort.

In cars fitted with sliding gears it is highly important to remember that the reverse must never be used as a brake and must never be engaged unless the car is at a standstill.

The driver of the car must of course use his own judgment as to the best way to negotiate bad stretches of road and avoid the many dangers that continually crop up on the highways. Conditions alter cases and no set of rules could be laid down to govern road driving. It's all up to the man behind the wheel.

DON'T START BY CRANKING.

A handy little wrinkle to remember is that if the car is left standing on a grade, it is not necessary to start the motor by cranking. The driver may get into his seat and release the brakes, and the car will start forward with its own momentum. Then open the throttle wide, switch on the spark and engage the high speed gear. The momentum of the car will turn the engine over, then it will start.

In leaving four cylinder cars most drivers before stoping their engines, speed them up and then, leaving the throttle wide open, cut off the spark. Charges of gas are sucked in and compressed, and sometimes it is possible to start the motor after several hours by simply switching the spark on and advancing the spark lever.

IN FRONT OF THE NELSON HOUSE, POUGHKEEPSIE.—THE ARRIVAL OF THE OLDSMOBILE AFTER THE DRIVE FROM NEW YORK, A DISTANCE OF 76 MILES, WITH THE HIGH SPEED LEVER SEALED IN.

The Dust Problem

And Practical Suggestions for Its Solution

By Douglas Mackenzie

From The Motor Way.

IN the building of roads the dust problem is important, and methods for overcoming this nuisance are being sought on all sides. The following paper was read by Douglas Mackenzie before the British Association at York, England, recently, and the points brought out will be of interest to the road builders of this country. Mr. Mackenzie says:

The improvement of transport facilities in recent years (due, in the first case to the introduction of the safety bicycle, and later to the motor car) has brought the question of improved road construction to an acute stage. The practice of road construction has been steadily deteriorating from the days of Telford and Macadam, until the marked decadence of road engineering has forced itself upon the attention of the community. The results of this retrogression are seen to-day in two obvious evils: first, the insufficiency of the roads to carry traction-engine and heavy motor-wagon traffic; secondly, the dust nuisance. No science can go backwards, it must always be progressing, but if those responsible for practical operations willfully neglect the teaching of science, considerable retrogression is inevitable.

The difficulties in the way of obtaining improved roads are partly administrative, partly financial, and no scheme of improvement is worthy of attention if due weight is not given to both factors. Several impracticable suggestions have been put forward recently, suggesting separate roads for motor vehicles, twin roads, etc., but most of these are outside the sphere of practical politics, because of the great cost and the interference with the present system of highway control. Any improvement must be gradual, must be such that it can be carried out by the existing country and district councils, and must be such that its cost does not materially increase the highway rates. The abatement of the dust nuisance is a subject that appeals to everyone, but the equally important subject of the road foundation only comes within the purview of those interested in heavy motor transport. These two features, the foundation and the dust, are indissolubly connected in the minds of engineers, because the movement of the substance of a weak road under heavy loads always results in the creation of dust, and a material that will grind to dust under ordinary traffic is obviously unsuited for heavy loads. But even if the foundation is strong enough to carry the load, the surface of roads constructed on the present system—i. e., with a water bind—are apt to "lick up" under heavy mechanical transport, and so a waterproof road is as important for its efficiency under heavy traffic as under the rapid passage of a rubber-tired motor car.

The County Surveyor of Nottinghamshire, Mr. E. P. Hooley, in the report to his council for the year 1901-2, makes the following definite statement when dealing with the damage done to the county roads by traction engine traffic: "Unless the road is waterproof, the material underneath becomes saturated, and is always subject to wet soaking in after every shower, or, worse still, after every continued spell of wet weather. When followed by frost, the result is almost too fatal to imagine, and certainly disastrous from a financial point of view." It is not within the scope of this paper to deal with the construction of the foundation, except insomuch as it is necessary for a clear understanding of the subject, and so far as the foundation is preserved by waterproofing the surface.

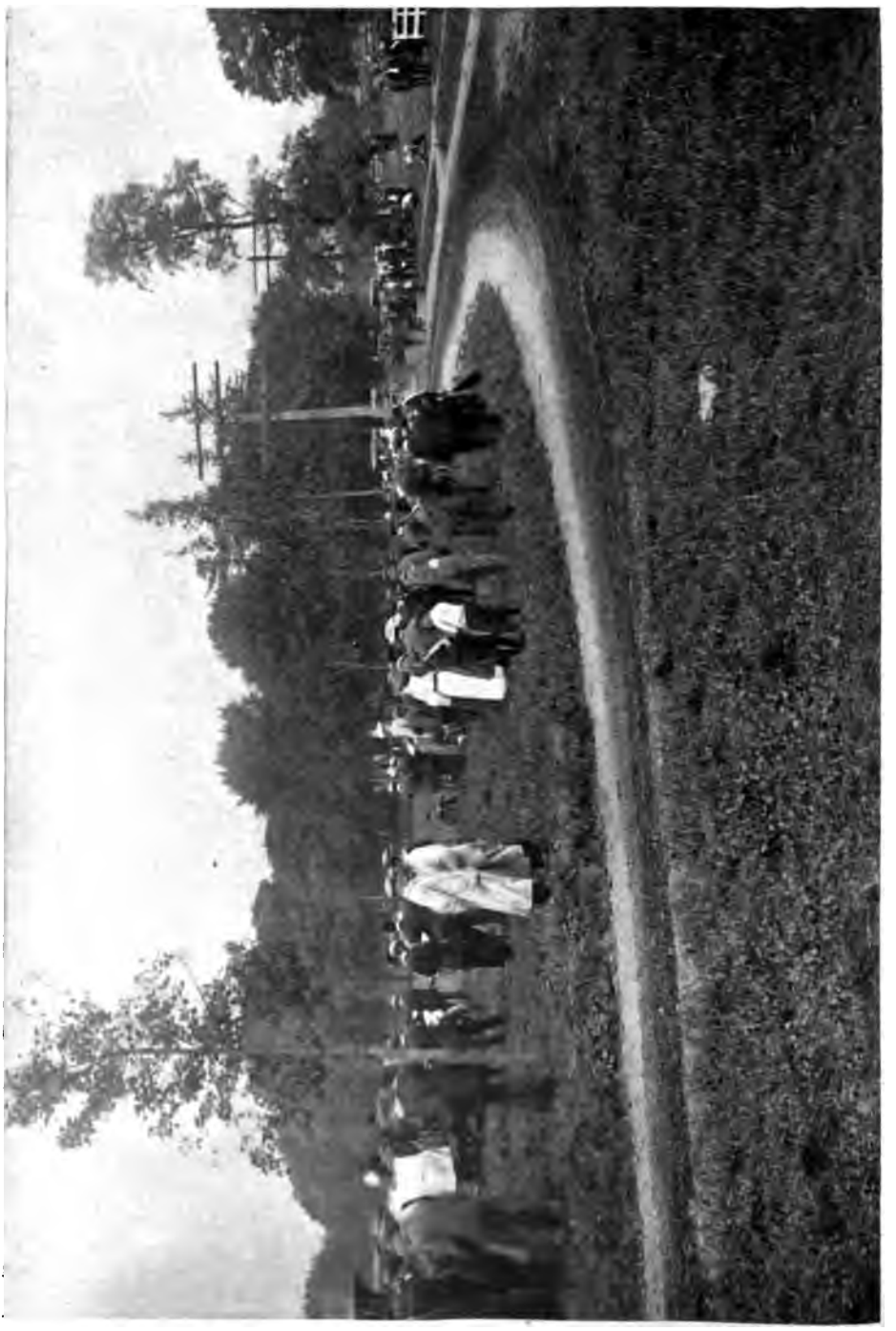
Turning from the consideration of the foundation to the surface, it will be generally admitted that a real remedy for the dust nuisance must also involve a real improvement in the road surface, and it is eminently desirable that it should result in real economy to the ratepayers, and a reduced cost for road maintenance. With this view it is necessary to first examine the present methods of road construction. Material for re-coating is selected with a due balancing of its value as a road material, and its cost at the site. It is broken to a size which is entirely the whim of the particular surveyor. In some isolated in-

stances it is then spread on the roads, and left to be ground in by the passing traffic; but the spread of higher education is rapidly eliminating this method. It is generally spread about 3 inches thick, steam rolled dry, then soaked with water, covered with so-called binding material—in the worst cases roadside soil or scrappings, perhaps gravel, but in the best cases chippings of the same material as the road metal—then it is again steam rolled "to the satisfaction of the surveyor." The result is an agglomerate composed of large pieces of stone, with the interspaces filled with ground-up road metal, binding material, or organic matter. If a very thick coating has been applied, and the rolling cut down, the interspaces at the bottom of the coating may be empty voids, or they may be filled with subsoil softened by the watering, and squeezed up by the rolling. In a few instances surveyors have cut down the watering to a minimum, and endeavored to make the steam-roller secure an interlocking of the stones with one another by dry rolling and plenty of brushing. This gets rid of the objectionable binding material, and makes a more lasting road, but it leaves interspaces between the large stones, to be ultimately filled with a floating population of the detritus of the road surface and of the detritus of the horse, so that it really comes to the same thing in the long run. It will thus be seen that the dust originates in (a) binding material, which loses its cohesion when it dries; (b) ground-up road metal; (c) organic matter originating with the horse; and (d) dust blown on to the road surface from the surrounding land. There is only one real remedy for (c) and (d), viz., to make a thoroughly smooth waterproof road," so that this dust will wash off into the channels by every smart shower. For (a) and (b) the remedy is twofold, viz., use a material sufficiently tough to prevent any movement of the stones on one another under traffic, and such that it is equally efficient in all weather. The answer in both cases is "waterproof," but the selection of a suitable waterproofing and binding material is not by any means easy.

It is necessary at this point to plead for a broader view of the whole subject than that frequently encountered. One surveyor in his report blamed the motor car for removing from the surface of his roads the protecting cushion of two inches of dust, leaving the road material exposed to attrition from wheels or horseshoes, and so causing wear and cost. He omitted to mention the increased draugh caused by this layer of dust, and that it reduced the load the farmer could take behind each horse by quite 30 per cent. Again, several inventors have patented preparations for impregnating the road with hygroscopic salt, which keeps the binding material always wet, and so prevents dust. It is true that a small proportion of water keeps the binding material from being removed as dust, and so prevents a loose road, but at the same time it makes a spongy road, the binding being a viscid fluid, and allows the stones to move on one another under traffic, wearing off all their sharp edges and decreasing the life of the road. The rapid and uneven wear of urban roads, which are repeatedly watered, is an illustration of this evil, and it is immaterial whether the water is obtained from the atmosphere by a hygroscopic salt or from the spreader of a watering cart, as it is in any case a cause of increased wear. The evil is one which cannot be adequately met by any palliative such as the application of water, nor will a palliative that is soluble in water be useful for more than a very short time. The remedy must be more drastic, and strike more directly at the root of the evil.

The history of the experiments made with palliatives were detailed with accuracy by Lord Montagu of Beaulieu (then the Hon. John Scott Montagu) in a paper which he read before the Automobile Club on December 1, 1904. It was explained that the application of these palliatives undoubtedly resulted in allaying the dust for ten days or a fortnight, after which fresh applications were necessary. The paper was a very thorough history of dust-laying experiments up to that date, and the author sets forth the results of experiments that clearly show that palliatives cannot be of much real use, except where roads are awaiting their turn for reconstruction with dustless materials, or for special occasions, such as race meetings, fairs, and so forth. From the experiments he concludes that the only remedy for the dust problem lies in the construction of waterproof roads, but he is not prepared with any data as to the cost of this waterproofing. A most valuable official pronouncement has just been made on this subject by the Royal Commission on Motor Cars, paragraphs 54 to 64. The Commission advocates improved road construction, and the use of harder and better stone is strongly urged, but they regret the absence of definite evidence as to the cost of upkeep of roads constructed on improved principles.

The "dust nuisance" has been so prominently before the public that numerous brains have been at work on the problem of its mitigation. The consequence is that, instead of having to find a material that will not result in an appreciable quantity of dust,



HAIRPIN TURN AT OLD WESTBURG ON THE VANDERBILT COURSE.

the difficulty is to choose amongst the many submitted for the purpose that which is the most suitable and economical under the circumstances of the particular road in question. It must not be forgotten that the difficulty with road reformers is to decide what is the most suitable material to use for the crust. There is no disagreement on the subject of foundation. It is universally admitted that the foundation must be such that the stones cannot be moved on one another by the heaviest traffic that may come upon the road, and as, therefore, there will be no movement in the substance of the road, there will not be any wear and attrition between the stones applied from the surface. It is now proposed to consider the various materials brought forward for the purpose of constructing waterproof road surfaces. There are many who will advocate a hard granite, and who consider that such is sufficiently dustless for all practical purposes, but it must be admitted that there is a certain amount of dust from a hard granite road, and even when binding material is from the same quarry there is a certain amount of water absorption at the surface, and, consequently, there are times, especially in the winter, when the road is a spongy mass. The very fact that there are interspaces between the stones is proof that water can lie on the road and gradually percolate to the lower layers, and so such a road has in itself the elements of destruction, which it should be the aim of every engineer to avoid. A very practical method of waterproofing such a road is to paint the surface by hand with distilled tar. This has been carried out in several parts of the country with considerable success, but notably in Kent and Surrey. The roads to which it has been applied in Kent are most of them made of the hardest granite, either Welsh, Cornish, Guernsey, or Norwegian, but many of the roads painted in Surrey have been flint and granite roads. The usual process is to sweep the road free from dust, apply the tar hot with an ordinary watering can, brush it over so as to work it into all the surface hollows, and then to cover it with a fine gravel to prevent it sticking to the tires of passing vehicles. It is very necessary that this should be applied only in hot, dry weather, and, in fact, this dry weather should have been continuous for at least ten days previous, so that the water has been completely dried out of the road. When this tar is applied for the first time, a second coating is necessary about a month later, and after that it is the practice to apply one coat each year. Waterproofing on this system is very effective for about six months of summer weather, after which it rapidly deteriorates, and by the end of twelve months the tar has to all intents and purposes disappeared. In the districts where this system has been applied everyone has felt the immediate advantage of the absence of dust, and it is only lately, after a longer experience, that the real evils of this system have become apparent. The first of these evils is a terribly greasy, slimy mud in the winter months, which contains a certain proportion of tar, sufficient to ruin any clothes on which it may drop. This greasy mud is far worse for a side-slip than any which motor vehicles have previously encountered, and it probably has a deleterious effect on the varnish of cars and carriages. It also treads into houses on the wayside and ruins mats and carpets. The second evil has come to light recently in the shape of complaints from people living at the side of roads that have been thus treated. At first they were rejoicing in the absence of dust, so that they could leave their windows open and enjoy the fresh air, but they have been struck by the fact that all their linen has gradually become a dirty color which no amount of washing will remove. Examination shows that there is a slight dust raised which contains a proportion of tar, and that this falls in almost imperceptible quantities, so that its presence is not at first detected. It, however, sticks to all textile fabrics, and it seems impossible to remove it by washing. The result is that curtains, table-cloths, and so forth are permanently ruined. That this gradual spreading of tar must take place will be obvious from the fact that the whole of the tar painting has disappeared at the end of twelve months. If it has disappeared, it has naturally gone somewhere, and a little consideration will show that it must be amongst the fine dust which is stirred up from the road by passing vehicles. During the recent race for the Grand Prix in France, the competitors experienced great distress from the course having been tar painted immediately before the race with a view to laying the dust, and enabling the spectators to view the race. It is probable that the tar-painted surface was not covered with fine sand, as is usual here, and that ordinary tar (undistilled) was employed. The volatile portions of the tar were drawn out by the sun, and no goggles were effective in shielding the eyes from their attack. All the competitors suffered, but Jenatzy was unable to start the second day, and had to have an operation performed on his eyes.

Several firms are making road material from slag treated with tar, and the excellent results obtained with one of the experimental sections on the Thames Em-

[illegible] the London [illegible] present the pro- [illegible] treated [illegible] forming that [illegible] material [illegible] the [illegible] road [illegible] engines [illegible] length of [illegible] in [illegible] of [illegible] that [illegible] some [illegible] Some firms are [illegible] materials prepared from [illegible] some [illegible] ment [illegible] the [illegible] very [illegible] surface is very good [illegible] again, the material is of a somewhat soft nature, and is liable under heavy traffic [illegible]

The application of tar, whether in a raw state or treated by distillation, to form a surface of granite road has been very successful. Great care is necessary in the first instance to thoroughly dry the stone, and even then there is a difficulty in getting the tar to adhere properly. Experiments have been made with the construction of a granite road by spreading the broken stone, dry rolling it in the ordinary way, and then pouring hot tar over it instead of watering for the final rolling. Close observation seems to show that when the road surface is in use the tar is naturally worn off the outer surface of the top stones, and then, absorb water during wet weather, and afterwards sweat from the other surfaces, thus forcing themselves out of the mass of the road by a floating film of water below them. Of course, when frost is able to add its agency the road soon breaks up. Another curious result has been remarked, namely, that if the road is examined after some time has elapsed, all the tar will be found to have disappeared from the upper layers of the coating, and a liquid layer of tar will be found below the coating. If the subsoil is of an absorbent nature, the tar will be found to have left the granite and to have saturated into the subsoil to a considerable depth.

From the many examples of tar painting that the author has studied, he has come to the conclusion that the great mistake has been in the use of tar as it is usually sold. Much better results have been found when the tar has been distilled, as the process is usually termed, that is to say, when the ammoniacal liquors and other volatile parts have been distilled out. But this process of distillation is not sufficient, as the tar is still capable of considerable further alteration after application. In many cases all that has remained in the tar paving has been a little substance of the nature of pitch, which fractures under the impact of steel tires, and the paving breaks up. What is required is the addition of some material that will toughen the tar, in much the same way that pitch is toughened for insulating purposes. A paving prepared with such a toughened tar should always remain sufficiently elastic to prevent fracture under the impact of steel tires, and at the same time sufficiently rigid to resist the drawing force of a traction engine driving wheel when it is used to impart motion to a string of loaded wagons. Among the many waterproof materials now put upon the market for paving purposes, the author knows of but one in which this toughening process is an essential feature, and the manufacturers very wisely keep the exact process a secret. The material is Quarrite, and it has been used for the roadway of the Blackpool Promenade among other places. The traffic here is considerable in quantity, but very little of it can be called really heavy, so that an exhaustive test of this material on a country main road, subjected to occasional traction engine traffic, is most desirable. The manufacturers of this material state that their toughened tar will adhere to granite, and if this statement is borne out by experiment, it will prove of immense value.

It will be remarked that no allusion has so far been made to asphalt for waterproofing roads. Unfortunately, the asphalts put on the market at present require a concrete foundation of great strength for their successful use, and, therefore, are impossible from financial considerations outside the large towns. It is not improbable that experiments with some refuse material worked up with Trinidad asphalt would result in producing a cheap waterproof paving, which would probably have to be laid in the shape of blocks. Unfortunately, no tests have been made with such a material under the severe conditions of country main roads, so that no information as to probable life or cost is obtainable. These figures would prove interesting if they could be obtained.

Here lies a scorcher who scorched
At evening, at noon and at dawn,
  Till he passed in his checks
  On a great pile of wrecks—
Now he'll get all he wants where he's gone.
—Fireside.

TRACY, WINNER IN THE ELIMINATIONS, MAKING HAIRPIN TURN AT OLD WESTBURG.

Garage Stories

Told by The Manager in His Leisure Hour

From The Automobile.

ON Monday morning the garage manager was in a savage mood. So, apparently, was the stout man who had just walked out of the garage office with a face like a thunder cloud. His last remark had been that he couldn't understand how it was that a man who was supposed to be in charge of a garage would let a car go out in *such* a condition; what good was a garage manager, anyway, if he couldn't see what was going on under his nose; and so on. And it took the garage manager some time to cool down to an ordinary working temperature.

"After all," he said, "I don't know that I blame him so much, for he doesn't know what to do except pitch into me, and in a way it was my fault.

"You see it was like this. Major Jones is an obstinate sort of man, but still he is rather easily imposed upon. He doesn't know the first thing about a car except what it cost him to buy it. As nearly as I can figure it out, he advertised for a chauffeur, and when a good-looking chap comes up, says he knows all about the Major's make of car, and backs up his statement by running the car around and doing a few slap-dash stunts that look mighty fine to an inexperienced eye, the Major jumped at the chance of getting such a jewel at the very reasonable figure he demanded. So Mr. Chauffeur gets a real nice job, and, being a smart chap along certain lines, he soon makes himself solid with his boss. By chance, however, I got the young gentleman's history, and found that though he wasn't exactly crooked, he wasn't a chauffeur at all except that he was able to drive a car. He didn't know how to handle tools and was profoundly ignorant of the vitals of the car he drove.

"I suspect that the Major had been asking him some awkward questions about the machine; at any rate, the chauffeur suddenly exhibited a fondness for taking off the bonnet and rubbering around the motor. This was all right, and he needed the information; but I felt rather doubtful when he came to me one day and said he wanted some sheet asbestos to make a gasket for an exhaust pipe joint. Up to this time he had always told me when anything was wrong, and I had one of our own men make it right. But I gave him the asbestos and the thing went out of my head entirely for the time.

"Next day—that was yesterday—Major Jones telephoned to have the car at the curb in front of the garage, as he wanted to take out a party of friends and would pick up the car at the garage. As bad luck would have it, the men pushed the car into the street without starting the motor, and the chauffeur busied himself making the car look smart. And pretty soon along comes the Major and Mrs. Jones, and a friend and his wife. The major got up beside the chauffeur's seat and the other three climbed into the tonneau.

"'All right, Brown,' says he, with a lordly nod to the chauffeur.

"Young Brown grabs the handle and swings her over a couple of times and away she starts; but there wasn't any ginger in the thing and I mistrusted that something was wrong. She ran steadily enough, however, and Brown let her run while the ladies were arranging themselves and their lap-robes. In a minute or to a little stream of smoke began to ooze out from under the bonnet and was wafted toward the Major's sensitive nose.

"'Brown, what's burning?' says he.

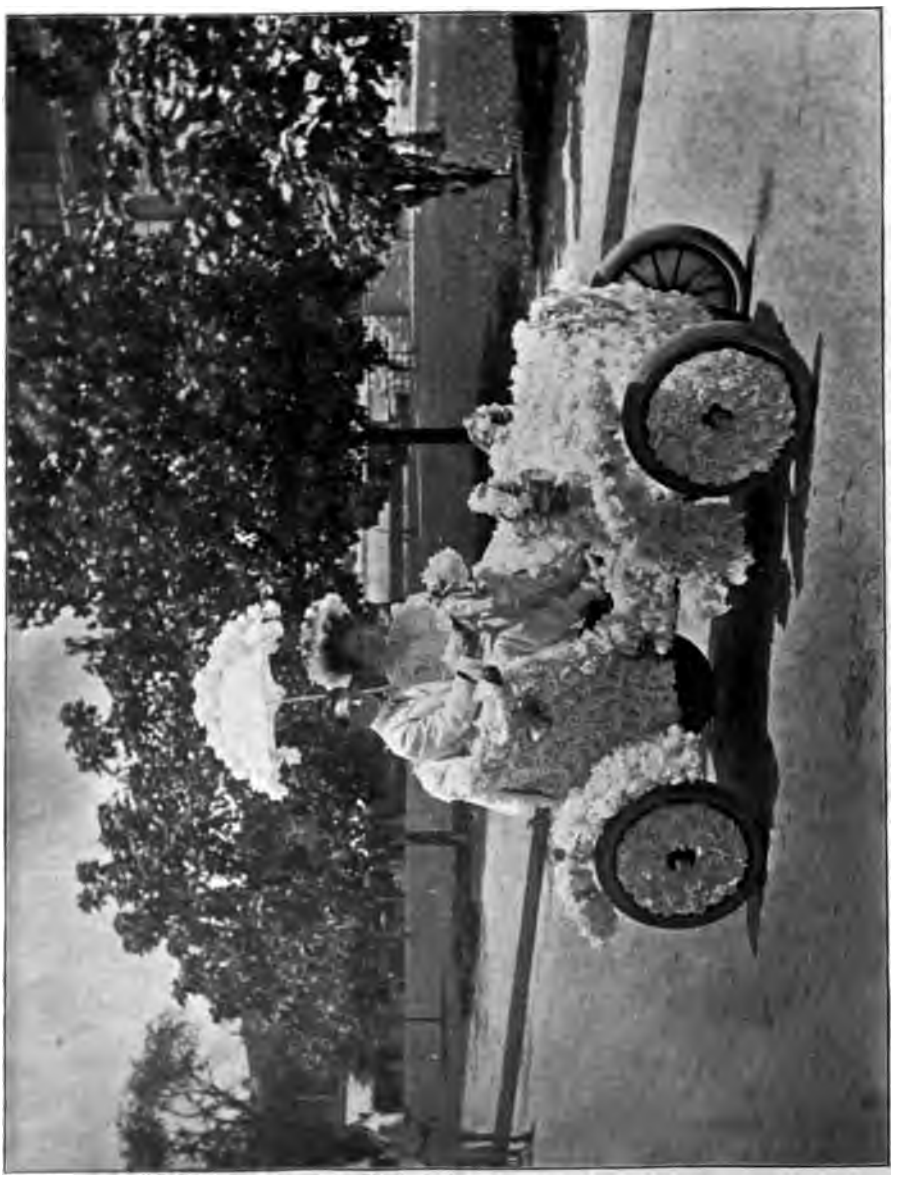
"Brown lifted the bonnet and found that a big wad of waste that he had put on the exhaust pipe *to keep his hands clean* when he was putting on the gasket was very naturally smoking to beat the band, and the Major, who detests unpleasant odors, was annoyed. It didn't look nice, either, just when he wanted things to pass off smoothly and with dignity. But Brown pulled off the waste, put down the hood and climbed into his seat.

"Then the real fun began. Brown opened up his throttle a little and started to let in his clutch; but the motor didn't pick up with its usual vim, and when Brown, in his usual dashing way, got the high speed in and was just settling himself

[illegible] [illegible] [illegible]

AN EXPERIENCE WITH KEROSENE

[illegible] the [illegible] had an interesting experience with [illegible] fuel supply. Before entering a region where we expected to find no gasoline, we stopped at a village and inquired for [illegible]. Not to error, we couldn't find any, but we [illegible] enough in the tank to take us back to the nearest base of supplies. Rather than wait to send a wire for [illegible]—and objecting very much to [illegible] of [illegible]—we took all we could get of a couple of gallons of kerosene and started out. As we expected, the next hamlet was innocent of gasoline, so we started by putting a quantity of kerosene into the gasoline tank with the gasoline. The engine took it all right, smoking a little, but by giving it more air the smoking was entirely stopped. But as the fuel



ANDREW CURRY, JR., TAKING FIRST PRIZE IN HIS OLDSMOBILE IN THE ELKS PARADE, SHREVEPORT, LA.

supply decreased we kept adding kerosene, and she began to smoke horribly and we couldn't prevent it. I haven't any idea what proportions of gasoline and kerosene we had, but anyway we had to stop and clean the plugs every few miles, and we left an odorous trail that would have made a pole-cat blush. The main point, however, was that we were enabled to travel about twice as far as we could have gone if we had not brought along the kerosene, and we struck gasoline just about the time the plug-cleaning business became an almost continuous performance. I think that another time I should waive dignity and send a horse for more gasoline; but we learned what could be done in case of emergency. If we had started on the kerosene earlier doubtless we would have had less trouble toward the end.

THE LATEST THING IN VALVE SPRINGS.

"One of our exhaust valve springs was made of miserable stuff and it broke. We fixed it up by putting a washer between the ends where the break occurred, but the blamed thing broke again and this time we couldn't do anything with it. There was a blacksmith shop handy, but the blacksmith hadn't anything we could make a proper spring out of. The idea of running on three cylinders was not attractive, and we finally got out of it by using a flat spring. The blacksmith had some fairly decent flat steel that answered the purpose. A piece of this flat steel was drilled at one end and the opposite end filed out to a forked shape. The drilled end was securely held by a bolt in one of the exhaust pipe joints, and the fork in the opposite end straddled the valve stem and pressed down on a washer slipped over the stem and held in place by the cotter in the stem. After a good many trials we got the spring adjusted to something approximating the tension of the others and, starting up the engine, found it ran very well indeed. Later we found that the spring was rather sluggish, and it got worse as it ran longer; but we used it throughout one day, and evening brought us to a place where we got what we needed."

When His Oil Gave Out

From The Motor World.

"What are you going to do if you run short of lubricating oil while on the road?" inquired one of a trio of motorists recently.

"Is that an extract from one of those 'become a chauffeur in three weeks by correspondence' question papers or is it a real question?" asked one of the others.

"It's serious business I tell you, if you have to answer such questions as that when you find yourself in the position assumed by such a query.

"Suppose for a moment, that you do find yourself on the road with your engine getting hotter every moment—miles from anywhere and everything but the crankcase dry and you only begin to form an idea of how the question presented itself to me not long ago."

"Well, give us the story, I'll take your word for it," lazily commented the third, "although for the life of me," he added "I can't see how anyone who claims to know how to run an automobile, whether he learned it through a correspondence school or not, ever could be guilty of getting himself into such a fix.

"If you are afflicted with occasional lapses of memory like yours truly, not to mention an ingrained habit of going off at half cock whenever a trip or something of the sort is on hand, you might understand it. Just by way of illlustration—

"Oh well, never mind the illustration. Let's hear the story. What did you do? That's what I'm interested in finding out" broke in one of the audience of two.

"Not so fast" retorted the story teller, you have to know how bad a fix we were in for oil before you can realize how serious the situation was.

"You remember, I've been threatening ever since last winter to go on a long tour away from the beaten track. Well, I planned it for fully a month ahead and the cost of the various supplies that I laid in would probably have paid the railway transportation and hotel bills of the entire—"

"And you forgot the oil," broke in his interrupter again.

"I did and didn't, but that't another part of the story. Jim, order this man a box of cigars and bottle of something strong to keep his mouth occupied," he went on addressing the third member of the party.

"I didn't forget the oil in my calculations by a long shot, because I bought two five-gallon tins of it and a five-pound tin of gear grease, And—I have them yet, or most all of that quantity, for like the dream of an automobile that was hashed up by the revolutionary inventor, there was only one thing wrong about that oil and grease—it didn't go. At least not when we went and that was the trouble.

"Of course I oiled everything on the car before we left—filled every oil and grease cup, replenished the crank case with new oil and even greased the springs. But in the hurry and bustle of trying to load four times as much paraphernalia on the car as we should have carried—

"Had some skirts along, I'll bet," again

ON THE GLIDDEN TOUR THE PRESS CAR.

broke in the irrepressible.

"You win hands down- no less than three women in the party and they sat up nights three weeks before we started talking over the lovely costumes with which they were going to dazzle all the people at the various resorts that we had marked out on a big colored map to descend upon. You know how the women in the average automobile party look when they strike a hotel after a dusty day's ride and how the women on the veranda stick up their lorgnette and take it all in. Well, our folks had planned to give some of those rocking chair fleets that adorn the fronts of the hotels a surprise.

"No don't be any more asinine than you can help. They weren't going to wear their finery in the car. Their idea was to use the ordinary outfit during the day and put on a few extra veils when they arrived at a hotel so that no one could see what they looked like or who they were. Take a woman in one of those long baggy dusters a fierce pair of goggles and all the rest of her lost in a bunch of straggling streamers and complexion protectors and you have a combination that even Sharlock Holmes could not see through.

"Well, Jim," again broke in the irrepressible, addressing himself to the remainder of the audience as if there were no one else present, "we have now learned that three women were responsible for all those trunks and other things but what's that got to with what's the captain's name? Oh, I mean, what are you going to do when the gasoline gives out?"

"That isn't it either? Well, go ahead, but remember we can get 350 pages of automobile novel for $1.09, so don't make it too long and ring the gong when you come to the last lap the last chapter I mean.

"We made an early start and headed due south," went on the story-teller unruffled, and reached pretty close to the southern border of Pennsylvania before halting for the night, a matter of close to 150 miles, I should say. Stopped at a little town called Oxford, not far from the Susquehanna River.

"Whatever got into me I don't know,

but somehow or other I never so much as gave the matter of oil a thought.

"Jim, that was no water wagon, was it?" openly commented the audience.

"I carry a couple of good sized oil cans and I had refilled all the small oil cups once during the day before, but that morning forgot the whole business as clean as a whistle. With the travelling that we had mapped out that day I never would have left Oxford without a supply of oil even if I had to go back to Philadelphia for it—had I known it.

"Good thing you added that last" came out of the cloud of cigar smoke.

"And we ran all that morning right up to lunch time without noticing anything wrong, and even started away from that stop without giving the matter of oil a thought.

"Worse and more of it. She must have been along," drifted out of the blue cloud.

"Well to make a long story short, we must have run another twenty-five miles and then a blind, deaf and dumb man could have noticed that the engine was getting hot as a furnace and beginning to labor. We stopped right there and put the motor out of business and then it was my turn to answer the question I have just put to you, for it didn't take more than ten minutes to find out that my generous supply of oil was not where it would come to any harm, nor do us a great deal of good. It wasn't there and then of course, the women pouted and made faces. Called me a stupid thing and all that for forgetting the oil. Had a regular Mrs. Coudle's curtain lecture except that there were three of them to suggest what the others didn't think of. They really couldn't see why I couldn't run without oil anyway. It was

ON THE GLIDDEN TOUR—ONE OF THE PLEASANT STRIPS OF ROAD AND SCENERY.

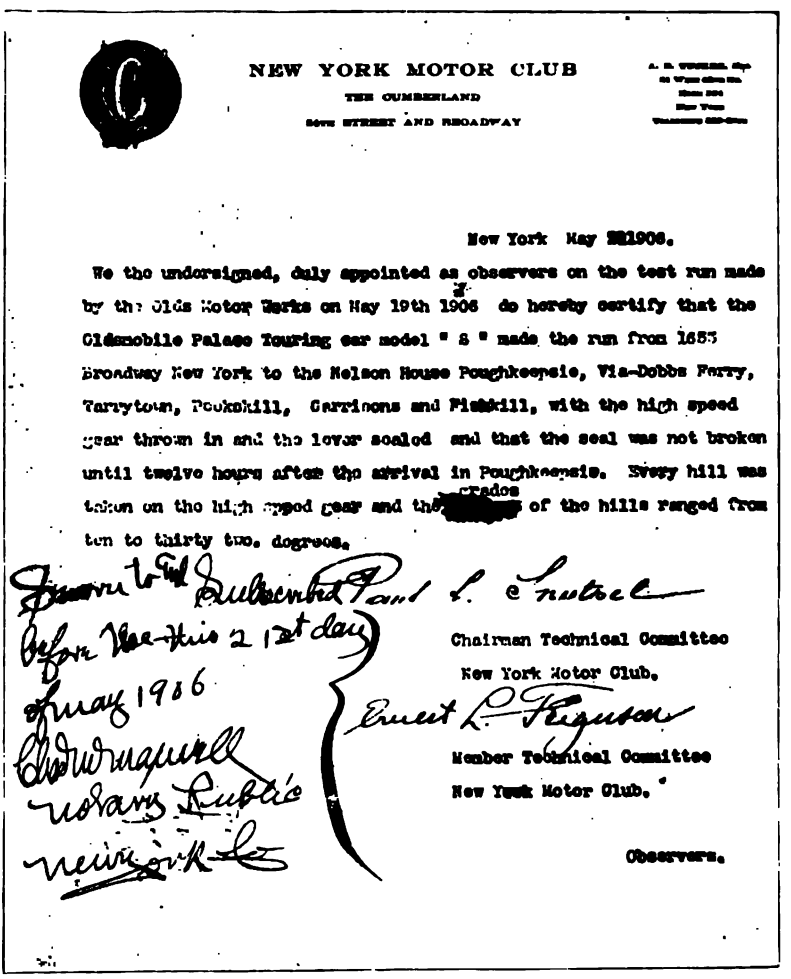
either a very poor machine or a mighty low grade mechanic, or I could dispense with such a trivial thing. Then what was the matter with salad oil. Wouldn't the old thing run on a little olive oil or cottonseed? I could get that at any corner grocery.

"There wasn't even a house in sight for that matter and I didn't relish the prospect. I wasn't going to gum things up just to save a few hours, so I didn't pay much attention to the volume of suggestions.

"Here's where the wonderful clever chauffeur got himself out of a bad fix," commented the audience, or rather one-half of it, while the other half asked:

"Well, how did you run the car 'miles from nowhere' without any lubricating oil?"

"I didn't. I walked two miles after having told the women to sit down and be good and luck was with me. I stumbled right onto the summer residence of a wealthy Philadelphian and there were no less than three cars in his private garage, one of them the same make as mine. And even more fortunately he was there at the time. Within ten minutes after I arrived there I was on my way back in one of his cars with a tin of oil and I hope you two smart Alecks will have as good luck if you ever get caught in a similar hole."



NEW YORK MOTOR CLUB

THE CUMBERLAND

58th STREET AND BROADWAY

New York May 21 1906.

We the undersigned, duly appointed as observers on the test run made by the Olds Motor Works on May 19th 1906 do hereby certify that the Oldsmobile Palace Touring car model " S " made the run from 1655 Broadway New York to the Nelson House Poughkeepsie, Via-Dobbs Ferry, Tarrytown, Peekskill, Garrisons and Fishkill, with the high speed gear thrown in and the lever sealed and that the seal was not broken until twelve hours after the arrival in Poughkeepsie. Every hill was taken on the high speed gear and the [redacted] grades of the hills ranged from ten to thirty two. degrees.

Sworn to & Subscribed Before me this 21st day of May 1906

Chas. W. Maxwell Notary Public New York Co.

Paul L. Scutes

Chairman Technical Committee New York Motor Club.

Ernest L. Ferguson

Member Technical Committee New York Motor Club.

Observers.

AN INTERESTING LETTER THAT IS SELF-EXPLANATORY.

France Wins Cup

Loss of Life and Broken Records Mark October 6th as A Memorable Day in Automobile History

ON Saturday, October 6, France for the third time won the international automobile road race for the Wm. K. Vanderbilt Jr. cup. The contest was run over the turnpikes of Long Island, the center of the course being about 20 miles from New York City. Italy was second in the race, France filled third and fourth positions, while Germany furnished the fifth car.

Only these five machines completed the tenth and last lap of the course, which was 29.71 miles in length. The total distance of the race was 297.1 miles, and Louis Wagner, driver of the winning car, made the distance in 290 minutes 10 2-5 seconds, a speed of more than a mile a minute for the entire distance.

One of the more than 200,000 spectators who lined the course paid with his life the penalty of too great curiosity. He was near the dangerous turn in the course known as Krug's corner. Two cars had flashed by when the man ventured out upon the road to get a better view of the others coming. With the rush and roar of throbbing engines, the French car driven by Elliot F. Shepard, an American, dashed into the man, who in the view of thousands was hurled high into the air. When picked up many yards from the scene of the accident, the man was dead. His skull was fractured, both legs broken and he was frightfully crushed. After a few minutes he was identified as Kurt L. Gruner, of Passaic, N. J. Shepard plunged ahead at 90 miles an hour along the straight stretch leading to the judges' stand. He was completely unnerved, however, and did not finish his seventh lap. It was given out that he had broken a crank shaft. Shepard was running sixth and was in a contending positon when the accident occurred.

Joseph Tracey, in his American car, crashed into a crowd of men and boys and seriously injured Sylvester Baldwin, a boy of Norwalk, Conn. Several others were slightly hurt. Tracey held to the course. Dr. Weilschott, an amateur driver of an Italian car, lost control of his big 120-horse-power machine on the very first round. He ran down two boys on a bicycle, then plunged down a 30-foot embankment. Both the driver and Colombo, his mechanician, were picked up unconscious, but were quickly revived. The injured boys are John Brooks and Robt. Ten Eyck, both living near the course. Several persons were run down by touring cars in the crush going to and returning from the race.

It was impossible to keep the immense throng off the course, although the committee had taken every possible precaution.

It was at 6:15 in the morning, which was cold, gray and misty after a night of fog, that the first car was sent away on its long journey. The others followed at one-minute intervals. The first big freak racing machine was shoved to the tape. The engines crashed in a deafening roar at the starting. The seconds were tolled off by an official. Beginning at "ten" he counted backward to "one" and then shouted in the driver's ear "go.' There followed a sputter of fire, the clank of gripping clutches, a cloud of oily dirt flung from the rear wheels, and the car was gone from view. The start and finish of the five cars which completed the entire distance follow:

No. 10—Wagner, France, 100 h. p. Darracq; start, 6:24 a. m.; finish, 11:14:10 2-5; elapsed time, 4:50:10 2-5.

No. 4—Lancia, Italy, 120 h. p. Fiat; start, 6:18; finish, 11:11:28 2-5; elapsed time, 4:53:28 4-5.

No. 18—Duray, France, 120 h. p. De Dietrich; start, 6:31; finish, 11:24:44 4-5; elapsed time, 4:53:44 4-5.

No. 15—Clement, France, 100 h. p. Clement-Bayard; start, 6:28; finish 11:29:59 4-5; elapsed time, 5:10:59 4-5.

No. 3—Jenatsy, Germany, 120 h. p. Mercedes; start, 6:17; finish, 11:21:38; elapsed time, 5:04:38.

Wagner, who won the cup, drove the same make of car that carried Hemery to victory last year. Hemery was to have driven the car this year, but at the eleventh hour gave way to his junnior associate on the racing team. Wagner was ahead on every lap.

Seventeen cars started in the race, and of these 14 were running when time was called. All 14 had completed the seventh round of the course, 11 had completed the

eighth, 5 had completed the ninth, and 5 had completed the tenth and last round over the course. This was regarded as a remarkable record.

Le Blon was the only driver of an American car to complete the ninth round.

Tracey, of the American team, winner of the American elimination trials, was on his ninth round when stopped.

The drivers slowed down to 25 miles an hour and less in negotiating some of the turns. Then to bring their average up to the 60-mile an hour notch, it was necessary to pound along some of the straight stretches at 90 miles an hour and more. The official grand stand was on one of these long stretches, and as the cars roared through the cheering thousands they were reeling off their fastest miles.

Mr. Vanderbilt, whose donation of the cup made the race possible, said:

"I am deeply distressed that the contest should have been marred by fatalities, but I am sure they were unavoidable. Every possible precaution was taken. The unfortunate and deplorable accident in which Mr. Shepard figured is the cause of keenest sorrow to me, and I sympathize not only with the families of those who were the victims of the accidents, but with Mr. Shepard, Tracey and the other drivers, who could not prevent them."

WILL ABANDON COURSE.

The racing board of the American Automobile Association held a meeting after the race and decided that no more races should be held under the auspices of the association over the Long Island course.

Chairman Thompson stated to the press that the board had come to this decision because it had been found impossible to keep the crowds of spectators in check and to avoid accidents such as occurred today, when several persons were injured and Elliot F. Shepard's car killed a man. For these reasons it was deemed inadvisable to hold further racing on the Nassau county course. Mr. Thompson said that in the future if similar contests should be decided upon they would be held at some place further down the island. He thought it possible that private property might be purchased for the establishment of a course. This could be fenced in along its entire length, and any outsider who ventured on the course would be guilty of trespass.

Mr. Thompson said that the association had spent thousands of dollars in the erection of wire fences along the course in order to keep the public from crowding the tracks and getting in harm's way. This precautionary measure had been rendered of no avail in many cases, as some of the spectators had brought with them nippers, with which they had cut their way through the fences.

THE ELIMINATION TRIALS

The elimination trials to select five American cars to represent American manufacturers in the Vanderbilt Cup Race, were held on Long Island, Saturday, September 22. The distance was 297.1 miles. Only twelve cars out of the fifteen that had been expected to start appeared for the contest, three having been previously eliminated by accidents and mechanical troubles. Quite a number of these were out of the race before they had gone very far, and only three were driven the entire distance.

The honors of the day went to Joseph Tracy, who drove a 90-horse-power Locomobile. His time was 5h. 27m. 45s. Le Blon, driving a 115-horse-power Thomas, was second, in 5h. 51m. 25s., with Harding, driving a 60-horse-power Haynes, third in 6h. 25m. 39s. These were the only cars that completed the ten laps, as people began to swarm over the course to get to the trains after Tracy finished, and Referee William K Vanderbilt, Jr., called the race off, thinking it dangerous to continue.

Christie, driving a 50-horse-power Christie car, who completed eight rounds in 6h. 20m. 34 3-5s., was given a place. The fifth place was given to the 110-horse-power Frayer-Miller; the 120-horse-power Pope-Toledo was disqualified under the rule given below, it having been necessary to start the engine of the big racer by having a touring car tow it for some distance from its quarters at Bull's Head. Chairman Jefferson De Mont Thompson and his associates disqualified it under the provision of rule 42 of the A. A. A. racing rules, which reads as follows:

Starting Cars—Starting of cars must be effected only by means of the motor, and without other means, as pushing by hand, lever, etc. This rule applies not only to the start at the beginning of the event, but to restarting after any stoppage for any cause whatever.

Caillois, driving a 115-horse-power Thomas, broke one of his cylinders early in the race, and proceeded under difficulties. Lee Frayer, driving a 110-horse-power Frayer-Miller, stopped at Roslyn with a broken radius rod and flat tire, which put him out of the race. Keeler, driving a 60-horse-power Oldsmobile, had trouble with his carburetor, which had been changed just before the race, and was put out of the running. This was a disappointment to many, as the machine had been picked by experts to win a place. The day before Keeler made the circuit in 34m., the fastest round made by any driver before the race. The 115-horse-power Thomas, driven by Roberts, was put out of commission by a broken valve rod, while Belden's 110-horse-power Frayer-Miller broke a wheel on the fifth round and had to be withdrawn.

Building a Cup Racer

Comments on This Interesting Subject

By George W. Dunham

From The Illustrated Outdoor News.

"Where will it all end," is a question often asked of automobile engineers, in regard to the power and speed of racing cars. The steady increase in the speed attained, which has been so noticeable year after year, must have an end. When will that end be reached? What will be the result? No one at the present time can accurately predict, but an explanation of the method of procedure, which is followed in the design of a racing car, capable of doing a required number of miles per hour, may prove interesting.

Automobile road-racing machines are, of course, the result of a natural development and practically all of the data which is now used in the design of a racing car, is based upon the experience of previous years. This is logical enough. In addition to this, however, the seemingly endless changes in the methods of manufacture, composition of materials, and in the general automobile practice, often make it a problem which will cause the engineer many sleepless nights.

One feature of the process, however, remains the same, viz: the way in which the size of the motor, ratio of drive, and size of wheels for a given speed is computed. For example:—supposing it is found from previous records, that to win in a certain race, an average running speed of eighty miles per hour must be maintained. The various road conditions, bad turns, necessary stops, time for repairs, etc., are taken into consideration and a maximum speed assumed which is, say 110 miles per hour. With this quantity as a premise, the engineer must take the horse power, weight and ratio of gear, such, that the required conditions will be fulfilled.

For the sake of argument, let us suppose that the wheels to be used are 36 inches in diameter, and that the circumference which is 3.1416 times that, is 113.1 inches or practically 9½ feet. Then for every revolution of the wheel, the car would, neglecting slippage, travel 9½ feet. As there are 5.280 feet in a mile, it is easy to see that it would require 555 revolutions of the rear wheels to make the car travel that distance. From this, the exact number of revolutions of the rear axle for a speed of 110 miles per hour, can be easily computed.

Next, the ratio of gearing used between the rear axle and transmission is determined, and finally the speed at which the motor must run is found.

The question of horse power is the next to be considered and for this it is necessary to know the weight of the car for the reason that the speed is dependent upon a certain fixed ratio between the horse power of the motor, and the weight of the car.

At this point, the skill and finesse of the designer is clearly shown. His knowledge of former construction, his familiarity with new products, types of metal, and strength and resistance of materials are all called into play. He nearly always has the choice of two or three kinds of material, two or three forms of construction, and two or three methods of assembling the particular part in question. Decisions made at this time, often win the race. Here the advise of other engineers, experienced drivers, and special representatives of other concerns are called in to service. Various lay-outs are made and the proposed plans freely discussed. Skilled workmen are called in from the shop, and questioned concerning certain methods of machining, the working qualities of various materials, and their judgment is asked on numerous points relating to the building of the car, their assistance being very necessary and at times invaluable.

Finally the preliminary lay-out is ready, the size of the cylinders, the compression which is to be used, the area of the ports, the carburetor, and the other vital parts of the engine are fixed and the work is turned over to the draughtsmen for more detailed drawings.

Just as an athlete training for a race strives to reduce his weight as far as is consistent with his final fitness, so the draughtsmen seek to cut out wherever possible, all surplus weight. The main frame is lightened by drilling holes in the walls The axles are treated in a similar manner, and in fact every casting, rod and gear is

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made as light as possible, consistent with the required strength.

This is where the engineer's knowledge of strength and resistance of materials comes to his assistance. For example:—frames which were formerly made of angle iron, or reinforced wood, are now made of very thin, but very strong pressed steel channels riveted together in such a way as to make an exceedingly stiff structure of a very light weight. Further; a composition of aluminum, a comparatively recent arrival upon the market, is used for transmission cases, small brackets, and other parts formerly composed of steel or bronze which, although heavier, did not give greater strength. Steel tubing, another fairly recent product, furnishes an excellent substitute for the heavy and less effective steel rods.

The draughtsmen are instructed to make use of any previous experience, which they may have had with racing cars, but each man must work along the general lines laid down by the chief engineer.

As soon as the detailed drawings are completed, blue prints are turned over to the purchasing department of the concern, and the purchasing agent instructed to spare no expense in procuring material of the very highest grade at the earliest possible moment. The several concerns furnishing material will, of course, feel a special interest in rushing deliveries, both from the stand-point of incidental advertising which they may obtain, and pride in their particular product.

At least the plans are finished, the parts are "machined up," and everything is ready for the "assemblers." A special room is selected in some secluded spot in the factory where the work can be carried on in secret. From this time on the blacksmith shop, foundry, and machine shop work night and day, and every energy is strained to the utmost, to get the machine on the road.

Sometimes materials do not arrive, parts have to be made by hand at an enormous expense, pieces are spoiled, but the seemingly endless job goes on regardless of labor or cost, until finally the finished cars is ready.

The driver in the meantime has watched, with eagle eye, for any tiny defect in the material, or method of construction, so that when the car is turned over to him, he knows exactly how every part is put together, and what provisions have been made for making the machine immune from motor troubles.

From this time on, he eats and sleeps with the car, giving it all the care which a mother gives to a new born babe, watching it with jealous eyes for fear some rival should "fix" it before the race—the time when it will appear before the cheering multitude alive with energy and possibilities—the embodiment of the spirit of the American racer.

TROUBLE IN A MOTOR CAR.

The tank called the Gasoline dirty,
The remark made the water boil,
The Engine got hot in a minute,
And said it was Spit-off the Coil;
The Shafts then began to get cranky,
The Wheel thought he'd give them a steer,
When the Carburetor tried to get loaded,
The transmission got all out of gear,
The Clock called the Car an old woman,
With her bonnet, apron and fan,
The Clamps tried to break the Accuser,
But couldn't get out of the Pan.
The Mat said the Seats had false hair,
And proved it by pulling the Switch;
Could the Engine have shaken his Jacket,
He'd have thrown himself into the ditch;
The Rim said the Chain was a golfer,
Because he had links of his own,
The Chain said his clubs were the levers,
And the balls he stole from the Cone.
The Radiator said he felt cooler,
Now that the muffler was off,
And was sorry it shocked the Absorber
To hear the poor horn with a cough.
If the Gas hadn't been so exhausted,
He'd have called down the Valves good and hard
For getting stuck up like the Oilers,
And forcing the Spark to retard.
Then in fear the Cone clutched the Fly-wheel,
The latter was strong for a spin,
But the Spark tried to jump the whole contact,
So the Cogs didn't dare to butt in.
The wires were for doing a Circuit,
But the Wheels were so horribly tired,
That when the Hub spoke to the Axle,
The Car said it couldn't be hired.
All this trouble would never have happened,—
I assert it because I was there,—
If the chauffeur hadn't twisted the Handle,
And started the whole dam affair.

—J. L. E. P. in Pneus.

Manifold Uses of A Car

While the versatility of the automobile is not always apparent, perhaps because it is seldom in great requisition, still there are instances where it has been developed to a remarkable degree says Motor World. Thus, for example, a South African correspondent writes:

"I know of one doctor up country who has a five horsepower Oldsmobile, with which he visits his patients; when it is not occupied in doing this, he puts a bit of belting over the flywheel and runs a forage cutter with it; when there is not sufficient wind he turns it on to his windmill to draw water from his well, and in the evening the belt goes on to the dynamo and supplies the house with electric lights; all of which is surely sufficient proof of the usefulness of the car and its adaptability to other purposes besides motoring."

Coming Events

Oct. 5-15—Leipzig (Germany) Exhibition, Krystal Palast.

Oct. 18—Hill-climbing contest, Gaillon, France.

Oct. 20—The Fourth Annual Cross-Country Run, Automobile Club of Philadelphia.

Nov. 1—New Zealand International Exhibition opens at Christchurch.

Nov. 1-16—Berlin (Germany) Automobile Exhibition.

Nov. 12-17—1,000 Mile Reliability Tour. Australia.

Nov. 15-24—London, Olympia Motor Show.

Nov. 23-Dec. 1—London, Stanley Show, Agricultural Hall.

Nov. 24-Dec. 4—German Automobile Show, Berlin.

Dec. 7-23—Ninth Exposition de L'Automobile, Automobile Club of France.

Jan. 5-12—Automobile Show, Dublin, Ireland, Irish Automobile Club.

Jan. 12-19—Seventh Annual Automobile Show of the Association of Licensed Automobile Manufacturers, Madison Square Garden, New York City.

Jan. 22-26—Annual beach races on Ormond-Daytona Beach, Florida.

BE ON THE SAFE SIDE

BY USING

G & J Oval Raised Tread Tires

These tires are made in the shape they assume in service, consequently there is no distortion of the fabric under load, and no danger of loose covers.

The flap prevents pinched tubes.

The shape of the tread assures just the right road contract.

STRONG
SERVICEABLE
COMFORTABLE

Ask for our printed matter.

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Ramsay-Hutchins Rubber Co. - Los Angeles

"Whitney" Detachable Roller Chains

PATENTED

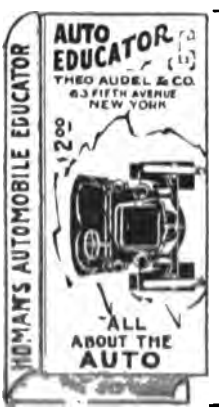
Against claims made by Competitors, we submit the following list of Motor Car Manufacturers using "WHITNEY" ROLLER CHAINS and STANDARDS. Is it not time for everyone to admit that "WHITNEY" STANDARDS FOR ROLLER CHAIN dimensions are now the American Standards?

"ADAMS-FARWELL"
"ADAMS VEHICLE CO."
"AMERICAN MOTOR TRUCK"
"AUTO-CAR EQUIPMENT"
"BAKER"
"BERKSHIRE"
"BIDDLE-MURRAY"
"CADILLAC"
"COLUMBIA"
"CHAMPION (McCrea)"
"CROWN"
"CRAWFORD"
"COLUMBUS BUGGY CO."
"ELWELL-PARKER"
"FORD"
"FRANKLIN"
"GAETH"
"GALE"
"GROUT"
"HEWITT"
"THE HOLMES"
"IROQUOIS IRON WORKS"
"KNOX"
"LAMBERT"
"MATHESON"
"MACK BROTHERS"
"MITCHELL"
"MOLINE"
"NEW YORK MOTOR TRUCK"
"OLDS"
"PACKARD"
"RAMBLER"
"RAPID"
"REO"
"STEARNS"
"THOMAS"
"TOURIST"
"WAYNE"
"WESTERN MOTOR TRUCK"
"WINDSOR," Etc.

THE WHITNEY MFG. CO., Hartford, Conn.

Murphy Varnish Wears Best

Murphy Colors Last Longest



A BOOK FOR OWNERS, OPERATORS AND REPAIRMEN:

Giving complete instruction in the care, construction and operation of all types of motor cars. Fully illustrated. Price $2 ... to any address. Money refunded if not ... Order today ...

Theo. Audel & Co.
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63 Fifth Ave., · New York

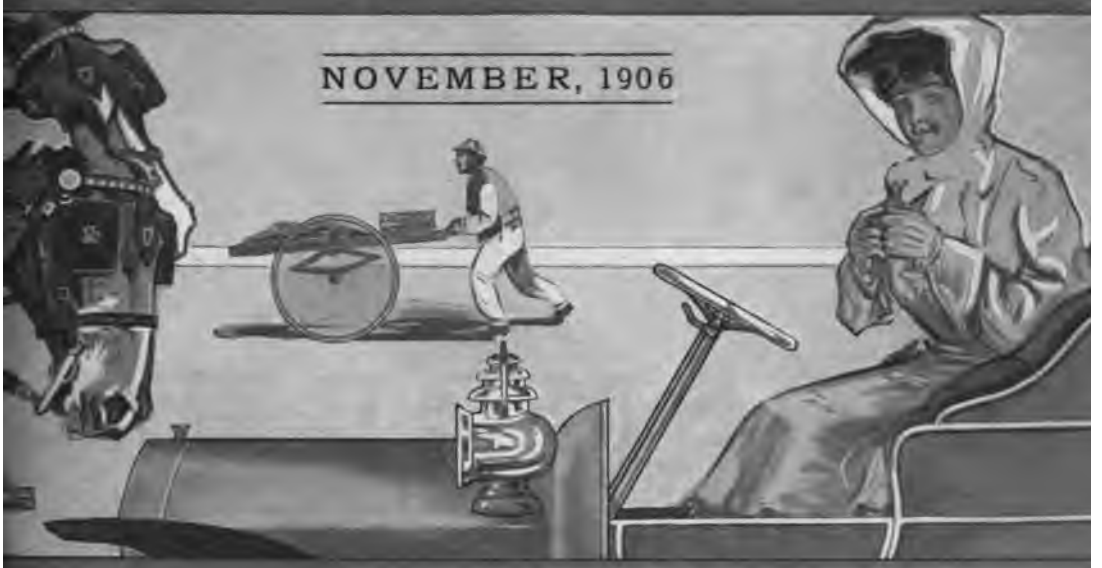
This calendar handsomely printed in colors size 14x22, suitable for framing, will be sent postpaid for 10 cents. It is entirely free from advertising.

Olds Motor Works, Lansing, Mich.

MOTOR TALK

A MAGAZINE OF OUTDOOR SPORT

NOVEMBER, 1906



AS PROOF CONCLUSIVE—the

OLDSMOBILE

Offers ten, and more, convincing reasons (actual facts) why it is the most economical to buy—the most satisfying to own—and why you *drive a winner when you drive an Oldsmobile.*

First. All the qualities essential in touring demonstrated by the Perfect Score made on the Glidden Tour in competition with cars costing double its price.

Second. The 505 Mile Non-Stop run made by the same car from Bretton Woods, N. H., to New York City, without any adjustments or alterations, immediately after completing the Glidden Tour. The run was made through *rain and mud* in the record time of 21 hours and 30 minutes, under the official observation of the A. A. A. Committee.

Third. Brake reliability demonstrated in winning the brake contest at the Open Air Show in New York.

Fourth. Vibration test won at Open Air Show by carrying a pail of water, brimming full, on the tonneau floor for 200 yards from a standing start, spilling but ⅛ of an inch on the way.

Fifth. Motor endurance — demonstrated by the 100 hour non-stop test made in Chicago.

Sixth. Motor endurance — demonstrated by the 200 hour non-stop test made in Detroit.

Seventh. Motor endurance—demonstrated by the 100 hour non-stop test made in Cincinnati.

Eighth. Hill climbing ability—demonstrated at Crawford Notch, Mt. Washington, Twin Peak Hill Climb, California, and the New York-Poughkeepsie run.

Ninth. Roadability—demonstrated by the 75 mile run from New York to Poughkeepsie over difficult hills and trying road conditions with the *high speed lever sealed in.*

Tenth. The records of the past five years made in this country and abroad.

And further reasons furnished by the "man at the wheel"—ask him, or w[illegible] for details of any of the above. **Address Dept. M. T.**

Aviation Licensed Manufacturers.

OLDS MOTOR WORKS
Lansing, Mich., U. S. A.

Canadian trade supplied from Canadian Factory, Packard Electric Co., Ltd., St. Catherines, Ont.

CONE

CONE WITH ROLLERS

CUP

Increase Your Horse Power

You can do it without developing a new and larger engine. Fit you wheels with

TIMKEN ROLLER BEARINGS

They remove one big element of friction, and it is friction that "eats up" power. Timkenless axles consume a lot of it.

Horse Power, **from the standpoint of road usage,** is not all a matter of stroke and bore. One of the reasons the Oldsmobiles deliver all of their power to the rear wheels is because they use "**Timken**" Bearings throughout.

Timken Roller Bearing Axle Co.

CANTON, OHIO

Mr. Manufacturer:

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Is your advertising agency a *Motor* or is it simply a "Coaster Brake?"

The metaphor is not exaggerated. The point is, Does your agency furnish real power which propels your business faster up the hill of Increased Sales? Is it of tangible assistance to you, or, like a coaster brake on a bicycle, simply a convenient attachment that makes it easier to go down hill—of no assistance climbing upwards?

Weigh the facts carefully. The answer is mighty important. It means dollars to you.

If your advertising agency is not a Motor—and a good reliable one at that—consultation with us will pay you.

It is easy to tell you that your ads are "making impressions" on the consumer. There is every probability of the truth in that statement, but you are entitled to something more than that. "Impressions" will not pay salaries and factory expenses nor lower cost of production. What you want is advertising that sells the goods—competent advertising service. You are entitled to it as long as you pay the bills. You will get it if you entrust expenditure of large investments to us.

Brownell and Humphrey *service* means more than aid in selecting the right mediums—It means right copy, right mediums and the right PLAN—a Powerful Motor in front leading you toward greater sales, bigger profits.

Our mere statements do not make this true. We can refer you to clients who know what we have helped them to accomplish. We submit that there is more than a bare possibility that what we have done for others we can do for you. Will you give us an opportunity to talk it over? Costs you nothing. Puts you under no obligations and may mean much to you. Why not let us get at the heart of the matter quickly? Why not write to-day?

BROWNELL & HUMPHREY Advertising DETROIT

Brownell & Humphrey

Advertising Agency

90 Griswold St., **Detroit, Mich.**

"Are-and-be"

Flat-Opening Detachable-Leaf Ledger

and BACKUS BOND HINGE ALL PAPER, FLAT OPENING LEDGER LEAVES, a combination absolutely necessary to obtain proper results from your Ledger Keeper

¶ Having originated the end opening power screw binder, we then set to work to obtain a substitute for the Linen or Cloth Hinge Sheet which was such a disadvantage on account of the increased thickness of the binder at the binding margin.

¶ Our **Bond Hinge Paper** has all the advantages without any of the disadvantages of the Linen Hinge, and is the only sheet producing flat opening results as it is the only sheet that is thinner at the binding margin.

¶ Full description of this Ledger, our Improved Trial Balance Book, and samples of our Bond Hinge Paper are furnished free upon request for our Catalogue P.

The Richmond & Backus Co.

DETROIT, MICHIGAN

Established 1842

NEW YORK OFFICE:
346 Broadway

BOSTON AGENCY:
DUNN & CO.
170 Summer St.

THE MAYOR OF THE CITY OF PANAMA LEADING THE PROCESSION IN HONOR OF SECRETARY OF STATE ROOT. THE OLDSMOBILE RUNABOUT, IN WHICH HE IS RIDING, IS ONE OF THE TWO AUTOMOBILES OWNED IN PANAMA.—*Photo published through courtesy of Mr. A. M. Rosenthal, of Panama, owner of the machine.*

Motor Talk

A Magazine of Out Door Sports

VOL. II. NOVEMBER, 1906 No. 11

From Detroit to Cincinnati

The Story of a 350 Mile Non-Stop Run

By L. A. Pratt

IF YOU have never turned out at five o'clock or earlier of a crisp autumn morning for an automobile spin across country, its time you did. You can't appreciate the full joys of the touring car until you have sat for a day or more behind a smooth running motor and watched the miles slip by and the ever-changing landscape rise up to greet you with fresh wonders of autumn foliage and ever changing fields.

It was a morning, cool, crisp, and invigorating—to be exact, the morning of October 21st,—that our party, consisting of Ralph R. Owen, of Cleveland as driver; Lee Anderson, of the Detroit News, as official observer; and the writer as passenger and ballast, left the garage at 750 Woodward Ave., Detroit Mich., for a non-stop run to Cincinnati.

After a hasty breakfast, the real start was made from the City Hall at 6:30 and merrily indeed our 35-40 H. P. Oldsmobile, 1907 model A, skimmed along the asphalt out Fort street way. So swiftly did we run that we failed to notice the turn at Clark Ave. and only realized our mistake when we ran plump into a strip of road rough and muddy enough to disgrace a Medieval village to say nothing of the boasted city of Detroit.

This mistake took us several miles out of the way but by circling around we finally came out on the "river road" where better running was found and Owen, the Chauffeur, did not hesitate to press the speed limit, but—then came the mud.

If you have a desire to know what mud is, you don't need to go wandering into distant states to find the real thing—the sticky, gumbo kind that clings to the wheels and makes life a burden to the man at the wheel, testing the control of the car and bringing into evidence every quality necessary to eliminate the apprehension of balks and petty annoyances—the real thing is found within half an hour's run from the Detroit City Hall.

Through River Rouge, Wyandotte with its mammoth alkali industries, quaint Monroe with its spreading nursery farms and beautiful village streets, we sped—ploughing through a sea of mud with only here and there a stretch of anything that looked like a traveled highway. Beyond Monroe we did strike a few miles which promised better things only to be plunged suddenly, without warning, into more mud which kept us company until we reached the city limits of Toledo.

At the Garage in Toledo where we stopped for gasoline our statement that we had left Detroit at 6:30 was received skeptically. We were told that the week previous—before the rains which were responsible for the present condition of the roads—a touring party in a much higher powered and

they did on this occasion and they also informed the writer that this ride would forever be uppermost in their minds as the jolliest trip they had ever made.

"This 100 hour test so successfully run and completed has caused no end of favorable comment by the public at large, and I am very sure that it is a splendid method of demonstrating the reliability of a car. We have never seen the inside of our tool case, and were not obliged to make an adjustment of any kind, not even to coils or change of batteries. This was by no means a new car, having been run at least 3,000 miles previous to the start of the test and the same air put in the tires at Lansing, Mich., is still doing service, and we are at a loss to know if it is the Lansing air or the good Diamond tires that are responsible for the above."

Twin Peak Record

Thrilling Exploit of An Oldsmobile Touring Car in California

From News-Letter.

AS remarkable a feat as was ever accomplished in the automobile world was performed Nov. 15, when Calvin Eib drove a 1907 model Oldsmobile to the top of Twin Peaks. Many attempts have been made in the past to climb this incline with an automobile. Creditable showings were made by some of the autos, but the top was never reached. With apparent ease Eib's car made the climb. Having done this, Eib decided to try for more laurels by reducing the time record from the base of the hill to the end of the road one minute and one second. This establishes the record for the long climb at two minutes and twenty-nine seconds.

Eib left the Pioneer Automobile Company's headquarters early in the morning to make a general survey of the country to travel over. A route having been decided on by him up the hillside, he returned to the garage, where the demonstrating Oldsmobile was selected to do the work. There was no special preparations made, but the car was run out of the shop as she stood.

On reaching the base of the hill the low speed was thrown in. Without a tremor the machine took the steep incline. Eib was seated at the wheel, while Wheelock, who acted as mechanician, was seated beside him. From the first moment the car began to climb she did not falter once for the fraction of a second.

Great, deep slits were cut in the ground here and there as now one wheel and now another spun around under the compelling force of the powerful forty-horsepower engine; but the loss of traction did not seem to affect the car in the least. Observers a little distance off could barely notice any halting. It was a steady pull for twenty-five seconds and then the gallant little car came to a standstill squarely on the apex—the first automobile that had ever rested at that high point.

The credit for the accomplishment aside from the great capabilities of the car, must be given to the clever driving of Eib, who instantly took advantage of every little spot in the road where the wheels would be likely to find a better hold.

Not the least accomplishment was the getting of the car back to the more level ground again. This was even a more difficult feat than getting up, for it meant turning around on a table that was but a few feet longer than the wheel base of the car. It was accomplished, however, and then the car was kept well under restraint until it reached the bottom of the hill.

After completing its great feat the car set about to secure the record for the run up from the foot of the hill at the end of the road. Last week L. M. Knisley in a Pope-Hartford established a record of three minutes and thirty seconds, and this was the mark that Eib set out to cut. The stopwatch started at the corner of Clayton street and Parnassus avenue. Besides Eib, there was one other person in the car, acting as timekepeer. The first part of the road, which is very rough and made dangerous in places by the car tracks which rise considerably above the level of the roadway.

[illegible]

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The Outlawry of Edith

A Live Automobile Story By Henry Rowland

From Appleton's Magazine.

"WILL you kindly tell me," said Mr. Cutting as he stepped in front of the motor car, "why it is that you look as if you had just been punished?"

Miss Edith Loring fitted the lunettes over the upper half of her piquant face.

"Because," she answered, "I have been bullied, threatened, and a trifle scared." She ran a practiced hand over the various levers. "Start the motors, please."

Mr. Cutting gave the crank a muscular half-turn and the motor responded with a racketing whir. He stepped into the car, and they started down the avenue of stately poplars.

"This morning," observed Miss Loring, "there arrived two more arrests. Papa was furious, hence my subdued demeanor. That makes five arrests and one bill for damages in the five weeks that I have had the car. The three Paris arrests arrived the same day; one of them was for smoking in the Bois."

"What!" cried the horrified Mr. Cutting.

"It was the car that was smoking. Too much cylinder oil. They would not have cared a rap if it had only been myself." Miss Loring skilfully dodged the ubiquitous pig. "Now, papa says that at the very next arrest the car goes to Paris to be sold. Fancy! One might as well be in heaven without wings as in France without an automobile!"

"Let me drive," suggested Mr. Cutting, "and then if there are any arrests it will be my party."

"That might do in New York," replied Miss Loring, "where you are dragged shrieking before a police magistrate, who tells you not to cry, takes your twenty dollars, and sends you out with his blessing to earn more money for the ward. Here in France it is more of a social event; you get a communication from the Police Department inviting you to be arrested at a certain time, R. S. V. P. So far, I have sent my regrets with a subscription. Papa would not let you pay the fine if you were in my car. He does not like you because you are rich, idle, and an artist."

"I have often disliked myself for precisely the same reasons," answered Mr. Cutting sadly.

For several moments they rolled quietly down the perfect French turnpike; then Miss Loring reached up and tore her lunettes from her flushed and angry face.

"Bother!—one doesn't need these things!" she exclaimed. "I wish that this place was like New York, where one knows when one is being arrested—" She leaned forard, cut off the motor, and braked. The car stopped abruptly.

"What's up?" asked Mr. Cutting in surprise.

"Get down, please. Now look among our painting things and you will find a ball of twine. I want you to tie strings on the number plaques, so that we can pull them up if we happen to pass a misanthropic gendarme. It's an old American trick, but it may be new to these Brittany police. I simply *can't* poke along this way."

Mr. Cutting hesitated.

"I don't think I'd try that trick in France, Edith," he remarked. "They don't regard evasion of the law over here in the same sportsmanlike way that we do."

"If you are going to be a baby," said Miss Loring icily, "I will wheel you home."

Mr. Cutting proceeded silently to do as he was bid.

"Now," observed Miss Loring when satisfied that her device was in working order, "we will turn on a little speed!" She slipped the lunettes down over her sparkling eyes, shoved the speed lever to the top notch, and the little car, with a squeel of gladness, sprang merrily ahead.

"Where shall we paint?" asked Miss Loring. "There is a nice Corotish grove on the road to Dinard."

Mr. Cutting murmured acquiescence. In the present company it mattered little to him whether he painted ships, cows, or the side of a house. Presently there passed them a huge touring car containing a man and a woman, and a tonneau piled high with luggage. Mr. Cutting sighed.

"What is the matter?" demanded Miss Loring sharply. "Have you a toothache?"

"No," he answered meekly; "that sigh was the result of a train of thought set in motion by those two people—and their lug-

gage—" He sighed a second time and with deeper feeling.

Miss Loring smote the horn until it blatted painfully.

"Please remember," she began coldly, "that talk of that kind is strictly *defendu!*"

"I did not say anything," protested Mr. Cutting.

"Then you implied stupidity on my part in not being able to translate your sighing. Let me remind you once more that, although I am very fond of you, I am not in the least in love with you. You are the very last type of man with whom I could ever fall in love; you are too lazy and indifferent. The man whom I should marry would be one who was alert and resourceful and quick and strong in emergencies—"

"Look out!" interrupted Mr. Cutting, to whom this discourse was somewhat lacking in novelty. "Gendarmes!"

It was a local market day and the road was thronged with peasants' carts. A file of these was toiling up a long grade toward them, and behind the last, Cutting's quick eye had caught a flash of red. In the excitement of her discourse Miss Loring had permitted the speed of the car to exceed the limits of prudence, and she was about to slow down when she observed that some of the horses were becoming restive. It was one of the many situations encountered requiring quick judgment on the part of the chauffeur, and to Miss Loring it seemed best to pass quickly before the demoralization spread. She threw on the speed and had almost reached the last cart when a mounted policeman spurred hos horse from behind it directly across her path. Miss Loring swerved sharply and in time to avoid striking the horse, but the startled animal swung itself backward, reared, and fell, throwing his rider upon the opposite bank.

Miss Loring threw off the speed, braked hard, and brought the car to a sudden stop. At the same moment the policeman, quite unhurt, scrambled to his feet.

"Hola!" he called. "Arretez—arretez la!"

"He's not hurt," said Mr. Cutting, "but I fancy we had better stop."

"Pull up the numbers!" cried Miss Loring fiercely. Mr. Cuting obeyed, and the next instant they were darting down the slope. Looking over his shoulder, Mr. Cutting saw the policeman run to his horse, mount, and ride rapidly in the other direction.

"*That* was exciting," said Miss Loring.

"Yes," answered Cutting dryly, "it is yet."

"What do you mean?"

"That fellow," said Mr. Cutting slowly, "belongs to a swell corps of the Gendarmerie Nationale. I am afraid that he has gone back to telephone from that town we just passed through, and that before many minutes our description will be posted in every police station in this district. I would now counsel our slipping home by some rustic and picturesque little lane."

Miss Loring's high color lost a shade, but her little chin was pushed combatively forward.

"Nonsense!" she said. "He got right in our way!"

"I am inclined to think," remarked Mr. Cutting, "that before we have gone much farther, there will be some more of them getting in our way."

Much vexed and secretly a little scared at the apprehensions of her companion, Miss Loring did not reply. They dipped into a plushy, green-lined valley, and across a little stream where the peasant girls stopped hammering the clothes and stared from wide eyes as they whirled past. Presently a little hamlet thrust its church spire and thatched roofs through the foliage ahead.

"If your fright has not sapped your strength," said Miss Loring ironically, "pull up the numbers. I am going through this village in haste."

Her promise was unfulfilled, however, for the little place was filled with marketers, and in front of the octroi station the congestion of carts brought them to a stop. Miss Loring horned violently, and a lane was beginning to open when a gendarme stepped from the office.

"M'sieur, madame, I must ask you to descend—" he began politely in French.

Two rows of small white teeth showed for an instant between Miss Loring's carmine lips. She threw on the speed suddenly and the gamy little car sprang forward. For one brief instant the astonished official sat upon the forward mud guard; the next he had bounded into the road and landed upon a small trussed pig, which filled the air with lamentation. Before the man could scramble to his feet, Miss Loring was picking her rapid way across the market place. Mr. Cutting looked back and laughed.

"For a lady who started out with the purpose of defying the police," he observed, "you have fulfilled your mission with a lavishness only limited by the amount of material furnished."

Miss Loring turned to him a somewhat pallid face.

"I did not mean to run him down," she said; "I meant only to push him out of the way. He might have been hurt; and, besides, he has bent the mud guard. I suppose that it would go pretty hard with us if they were to catch us now."

"It would be very expensive," answered Cutting, "and, for the span of several hours

Orsova and the Iron Gates. The Danube, however, once passed Buda-Pest, is hardly attractive. Through wide, low plains, rich in grain, and in herds of the Cape buffalo—the beast of burden of Hungary.—the Tawny river, blue only under exceptional skies, winds, curving, sleeping in its bed, toward Servia, Bulgaria and on to the sea. Only the picturesque villagers, and the gypsies, who throng the roads, begging for sugar and kreuzers, and the occasional glimpse into native life at some wayside inn, repay for his motor spin.

Away toward the east, in the Transylvanian Alps, the land Jokai wrote about, there are other worlds for the motor car to conquer. Especially in the late autumn, when the mountain forests are coloring, is Transylvania beautiful. Quaint churches, quainter fetes upon the common, and the curious dress of the peasantry, combined with rugged landscapes, and, again, good roads, make one wonder, instinctively, why the motor car has not penetrated into this region long before.

Dustless Roads

Experiments Abroad as Noted By Different Observers

From the Automobile.

CONSUL-GENERAL Frank H. Mason writes from Paris that in a newspaper paragraph published in America during the past summer the statement was made that certain American tourists, traveling by automobile through France, had been annoyed by the coal tar on certain roads adhering to the wheels and being thereby spattered over their car and the clothing of its occupants. Mr. Mason continues:

The impression created in some quarters by this publication has been that tarred roads have not, on the whole, proved successful in this country. In reply to several inquiries on this subject from persons interested in road improvement in the United States, the following information has been obtained from authentic sources:

The treatment of macadamized roads and streets with crude petroleum as a preventive of dust in summer and mud in winter was first attempted in southern France ten or fifteen years ago, and appears to have been successful for the suppression of the dust caused by ordinary traffic. But for obvious reasons the use of petroleum soon gave way to that of coal tar, which as a by, product of gas manufacture, can be bought in nearly every district of France for 5 to 7 centimes per kilogram; that is, $10 to $12.50 per metric ton of 2,200 pounds. Coal tar has the additional advantage that, unlike oil, it hardens when exposed in a thin layer to the action of the air, covering the surface of the road with a practically air and water-tight skin, which not only holds down the dust in dry weather, but prevents water from penetrating the roadway in time of rain, provided the road itself is well constructed and the tar properly applied.

How the French System is Applied.

One of the first important experiments made by the French department of bridges and roads was on the national route from Oran to Mers-el-Kebir, in the Algerian department of Oran. The test was made on a portion of the road leading from the city to a quarry, and over which the hauling of stone is heavy and constant throughout the year. The success of the system was fully demonstrated, and it has since been adopted and applied to many country roads and macadamized city streets throughout France. From evidence carefully collected and confirmed by the "Touring Club de France," it appears that tarred roads have been uniformly successful wherever the conditions have been normal and the work properly and thoroughly performed.

[illegible]

[illegible]

[illegible]

to be stripped of her mud guards."

Edith leaped to her feet and dashed the tears from her eyes. Before the gratified Mr. Cutting could realize what had happened, she had thrown her arms about his neck.

"O Jim—Jim!" she cried, "you *are* clever! If you get us out of this scrape, I'll marry you whenever you like!"

Mr. Cutting spared himself a moment in which to express his appreciation of this generous impulse, after which he fell to work. Securing a large tin can, he proceeded to mix together all such colors as contributed to the formation of yellow. The broad mud guards were then discarded and hidden in the vines, after which the outlaws fell to work with the widest brushes to spread the brilliant if somewhat unwholesome color upon the dark olive-green enamel of the car. This task finished, the two artists pronounced the disguise complete.

"I am now," observed Mr. Cutting, laying down his brush, 'about to give you a shock."

"I am no longer susceptible to any shock not associated with a gendarme," replied Miss Loring.

"We have disguised the car," said Mr. Cutting, complacently surveying the sickly yellow, naked-looking vehicle, "and what I now propose is that we disguise ourselves. I would advise that you remove that flippant hat, pin your hair beneath my cap, put on my raincoat, and contrive to make yourself as boylike in appearance as you sometimes are in behavior—"

"Jim!"

"And while you are doing so I will retire to the greenroom and attempt, with the assistance of a pocket mirror and a pair of scissors, to remove my beard and mustache."

"Jim!" cried Miss Loring. "Do you think that you can do it?"

"In part. It is very necessary, because you see we are no doubt already described in our criminal characters as a large bearded man and a beautiful but bloodthirsty woman, ranging the country in a dark olive-green car and exterminating gendarmes. No one would ever think of arresting a pleasant-faced, smooth-shaven young man and a red-cheeked boy in a bright yellow runabout."

"I plainly see," observed Miss Loring, "that as a law-abiding citizen your talents have been wasted, Jim."

Mr. Cutting retired to the depths of the foliage, to reappear a few minutes later looking like a harmless tourist who had lost his razor and distrusted the skill of the French barber. Miss Loring had completed her disguise, and as soon as she was able to recover from the shock caused by the appearance of her companion, she took her seat at his side and spread th elap robe in such a manner as to hide her skirts. Mr. Cutting was, of course, driving the car.

With fiercely beating hearts they backed out into the road and turned their faces in a direction opposite to that taken by their late pursuers. The little car, as if ashamed of its burlesque and unclad appearance, sped swiftly down the road. Presently a cathedral spire, poking itself above the brow of a hill, told them that they were approaching a town.

With as bold a front as might be assumed by a gentleman of tramplike visage, a pretty girl doing her best to hide her charms beneath spreading lunettes and a man's cap, and a sticky-looking, freshly painted little motor car of a villianously jaundiced hue and naked of mud guards, they trundled into town. As in many such places in Brittany, the road entered at right angles and between high, whitewashed walls which threw back sonorously the blare of the horn. Suddenly they turned a sharp corner and found the street blocked by an excited crowd composed of gendarmes, peasants, tourists and townspeople. The nucleus of the gathering appeared to be a very pretty woman with a very angry face, sitting alone in a small, one-seated olive-green automobile.

"That is the Countess Cantini!" exclaimed Edith. "I wonder what it is all about?"

"Look overhead," replied Mr. Cutting grimly, "and you will not be long in doubt."

Edith turned her eyes upward, then grasped the arm of her companion with a stifled scream. On the face of the sombre stone building at their right were inscribed in huge letters the forbidding words, GENDARMERIE NATIONALE.

A gendarme stepped toward them and touched his cap.

"You will please to stop your motor, monsieur," he said politely in French. "We have orders to hold for investigation all single-seated automobiles passing here today."

With a sinking heart, Mr. Cutting obeyed. At the same moment there was an ebullition of the crowd from the doorway of the building, and there emerged a strongly built young man in automobile costume. His handsome face was red and angry and he was protesting in voluble and impassioned French with a frightened-looking police officer.

"Willoughby Schuyler!" howled Mr. Cutting in delight. "Hello, Will!"

Mr. Schuyler looked around in surprise. For a moment his face was blank, then suddenly it lit with amused recognition .

"Jim Cutting!" he cried. "Didn't know you without your mask, Jim." He glanced

AN OLDSMOBILE MODEL A 35-40 H. P. TOURING CAR CLIMBING A CINCINNATI HILL ON HIGH SPEED

curiously at the yellow car. "Are you held up too? Where did you get that car—in a candy shop?"

Mr. Cutting leaped down and hurried to his friend, whom he drew to one side, to the unconcealed relief of the police officer, whom Mr. Schuyler had succeeded in convincing that his arrest would result in an international complication with the United States.

"What have they stopped *you* for, Will?" asked Mr. Cutting nervously. Schuyler made an all-encompassing gesture.

"For what have they not?" said he. "Running down a mounted gendarme, having no numbers, and assaulting another gendarme with intent to kill seems to be the least of it." His face became perplexed. "Somebody must have been raising the mischief through here to-day, Jim," he said.

"So they have, Will," answered Mr. Cutting dejectedly. "The worst of it is that Miss Loring and I are the innocent cause of all of the trouble." And in a few simple words he gave his friend a truthful account of the interesting incidents of the morning's drive. Before the tale was finished, Mr. Schuyler, to the amazement of the spectators, found it necessary to lean against the wall of the building in order to laugh without falling into the road.

"Forgive me, Jim," he said to his somewhat injured friend. "It's a serious matter, very; but you see it has certain humorous features, too. Your face, for instance—" He managed with some difficulty to compose his own and pondered, while Mr. Cutting waited in the respectful silence with which one attends the opinion of an expert.

"As the situation now stands," observed Mr. Schuyler judicially, "it is a case of 'jug.'"

Mr. Cuting shivered.

"But it simply *can't* be that, Will," he protested. "I'll pay any sum rather than have Miss Loring detained."

Mr. Schuyler's eyes twinkled.

"Is it as bad as that, Jim?" he asked.

"It is worse," confided Cutting. "You—eh—see, Will, Miss Loring has—eh—promised to—eh—marry me if I can manage to get her out of this fix."

A sudden light flashed in the fine eyes of Mr. Schuyler.

"She has?" he cried. "Do you know," he continued slowly and thoughtfully, "I believe that this simple fact may save the whole situation—" He mused in silence. "How soon would she be willing to marry you, Jim?" he asked suddenly.

Mr. Cutting blushed.

"She said that she would marry me as soon as I wanted her to," said he candidly.

"H'm." Mr. Schuyler nodded slowly. "I—eh—presume that you have no especial reason for wishing to delay the—eh—ceremony?" he inquired diffidently.

"Certainly not," replied Cutting somewhat heatedly. His high-bred features grew dusky red. "Look here," he demanded with sudden heat, "are you trying to chaff me? What has my getting married got to do with it all, anyway?"

"I would be the last to chaff you at such a moment in your life, Jim," said Mr. Schuyler reproachfully. "I have too much taste. Besides, it would not be safe. Before I have finished with your case you will have twofold reason to bless me. I have been raising Cain with these people for the last half hour because they stopped the Countess and myself; she was Miss Moore, of New York, you know—married a Dago, now defunct. They have sent for the chief of this district and expect him back every moment. He is an acquaintance of mine, a fine chap; and if you will do exactly as I say, I am in hopes that I can pull you through clear—do you understand? But you must do precisely what I tell you to, and make Miss Loring promise to do the same. Will you?"

In an ecstacy of gratitude Mr. Cutting wrung the hand of his friend. At the same moment a stylish dogcart whirled up to the door and a tall, handsome Frenchman descended.

"Here he is now!" cried Mr. Schuyler. "Now go to Miss Loring, Jim, and make her promise to follow my directions without question—" Schuyler broke off to hurry down the steps, where he was warmly greeted by the fine-looking Frenchman. The two walked up the steps and disappeared in the Gendarmerie. Mr. Cutting, in a tremor of hope and fear, stepped to the side of Mr. Schuyler's automobile, where Miss Loring was giving to the Countess Cantini a carefully censored account of the experiences of the morning. After being presented to the Countess, Cutting drew Miss Loring aside and readily extracted from her a promise to follow blindly any directions proceeding from Mr. Schuyler.

Before many minutes had passed, Schuyler, followed by the courtly Frenchman, whose handsome face wore an expression of sympathetic amusement, emerged from the building, when a series of introductions ensued. While the Frenchman was chatting with the Countess, Mr. Schuyler drew the two outlaws aside.

"It is all settled," he announced with a somewhat nervous elation. "I've got you off scot free!"

"What!" cried the delighted Mr. Cutting, edging slightly in front of Miss Loring, whose actions indicated a disposition to

throw her arms about the neck of their deliverer.

"Yes," replied Mr. Schuyler, "no jail, no fines, not even the confiscation of the car. One can't overestimate the value of a little influence here in France," he continued modestly. "I've arranged everything."

Mr. Cutting grasped him warmly by the hand, while the expression of Miss Loring's face said volumes.

"All that you've got to do now," proceeded Mr. Schuyler, "is to take a little trip to the Channel Islands."

"Take a trip *where?*" cried Mr. Cutting.

"To Jersey—St. Helier," replied Mr. Schuyler easily.

"What do you mean?" cried Edith. "What in the world are we to do at St. Helier?"

"Get married," answered Mr. Schuyler with decision.

"Get married! Why?" demanded Mr. Cutting fiercely.

"Why does anybody get married?" replied Mr. Schuyler evasively. "No doubt you have very good reasons of your own—"

"But—but—but—"

"Sh'h'h!" whispered Mr. Schuyler warningly. "You see," he continued, "I have explained to my friend the captain that all of your performances of the morning, with your subsequent crafty and criminal attempts to injure and evade the police, were due to no contempt on your part of the admirable corps of Gendarmerie Nationale, of which he is the local chief, but because you were an eloping couple pursued by a frenzied and furious parent—"

"You—you—you—" began Mr. Cutting dazedly.

"Don't interrupt!" said Edith.

"Of course," continued Mr. Schuyler smoothly, "he asked me at once by whom you had expected to be married, and I told him that you were going to an English clergyman at Dinan, whereupon he said that nobody in France could marry you without your certificate of birth and baptism and citizenship and vaccination and parents' consent and motor license and kennel register and—"

"Oh, rot!" growled Mr. Cutting. "Get back on the road again!"

Mr. Schuyler threw him a pained look.

"He was very kind and sympathetic," he continued. "He said that this put an entirely different face on the matter; that no chivalrous gentleman would think of letting a trivial matter, like the mutilation of a few common gendarmes, interrupt the course of such an ardent attachment. In fact, he insisted upon personally conducting the to the limits of his own jurisdiction, s going with Countess Cantini and myself to see you safely aboard the steamer which leaves St. Malo for Jersey in about two hours. It's only about a three-hour sail, you know, and at St. Helier you can get a special license and be married at once by an English minister."

For an instant the two culprits stared at each other dumbly while Mr. Schuyler regarded them with an air of profound benignancy.

"How utterly absurd!" cried Edith, her cheeks very red and her eyes shining with even more than their usual brilliancy.

"That's all nonsense!" snapped Mr. Cutting, with a somewhat questioning glance at Edith.

"Oh, very well," said Mr. Schuyler with intense bitterness. "Of course, if you prefer a French prison to an English chapel, and the bonds of the Frankish law to those of holy matrimony, it *is* all nonsense! It's not for *me* to decide. But I must say that I think you might consider *m* position a trifle."

"*Your* position!" gasped Mr. Cutting.

"Certainly! Didn't you tell me that Miss Loring had said that she would marry you whenever you wished if you could get her out of this scrape, and didn't you also say that you were willing to marry her at once if necessary? Well, I acted on that. And now if you both crawl, don't you see how it is going to discredit me? I must say that it strikes me as a pretty shabby return for all of my—my—"

"Lying," suggested Mr. Cutting.

"My tactful efforts," continued Mr. Schuyler. "I suppose that this Frenchman will probably challenge me to a duel and slip a rapier through me—just when"—he glanced at the Countess Cantini—"life is so full of joyful promise." There was a note of infinite pathos in his voice.

Mr. Cutting raised one hand in a futile effort to tug at his missing mustache. He glanced furtively at Miss Loring.

"We did give the scoundrel our promises, Edith," he said tentatively.

"We—I could never be happy if we felt that his blood was upon our heads!" sighed Edith.

"Of course," said Mr. Schuyler in the voice of one prepared to immolate himself upon the altar of friendship, "I am not such a cad as not to release you from your promises if you really ask it of me but in that case you will have to go to jail, of course, and possibly I might have to go with you as an accomplice in aiding and abetting your escape."

"We can't let Schuyler go to jail on our account, Edith," observed Mr. Cutting with bitter sarcasm.

"Of course not!" answered Edith. "The Countess Cantini would never forgive us!"

"After all," said Mr. Schuyler persuasively, "in the happiness of a lifetime, what difference do a few bitter moments make? The old cock—eh—Mr. Loring will soon get over his vexation; and the chances are that you would have to elope, anyway, in the end. Besides," he continued in honeyed tones, "think of the priceless moments which you gain by taking the matter into your own hands."

Edith turned away to hide the crimson in her cheeks, while the pale, denuded portion of Mr. Cutting's aristocratic face shone a scarlet contrast to the more weatherbeaten parts. Mr. Schuyler raised his hand and coughed.

"Come," he said to Mr. Cutting. "Faint heart ne'er won a race with the French police. You have begun splendidly; don't slacken the pace on the stretch! You might as well elope now as later, and the old—eh—Mr. Loring would never consent to give his daughter to an ex-convict—"

"Oh, rot!" growled Mr. Cutting, glancing at Edith out of the corner of his eye. There was a short but portentous silence, which was finally broken by the girl. She turend a pale and somewhat frightened face toward her fellow outlaw.

"What do *you* think, Jim?" she asked shyly.

"I agree with *you,* Edith," answered Mr. Cutting diplomatically. Edith sighed deeply.

"Very well," she murmured. "I suppose that there is really nothing else for us to do!"

Not so very many hours later a plucky little mud-guardless motor car, cleansed of a recent coat of sticky, yellow paint, was skipping blithely over the road from Dinard to Dinan. Mr. Cutting was driving—with as much skill as the rather close proximity of a newly wedded wife would permit of his doing.

"Never again," said Mr. Cutting in an ecstatic voice, "will I malign the efficiency of the provincial police of France."

"Hereafter," cooed the dimpling bride, "they may arrest me as often as they please."

"Let us hope, however," said Mr. Cutting, "that such arrests will never again be followed by the same train of circumstances."

A laugh rippled from the fresh lips of the bride; then her pretty face became serious.

MRS. D. H. STOVALL OF GRANT PASS, OREGON, IN OLDSMOBILE WHICH SHE HAS HAD IN SERVICE FOUR YEARS. IT HAS COVERED OVER 12,000 MILES OF OREGON MOUNTAIN ROADS, AND IS IN FIRST-CLASS CONDITION.

"Dou you realize, Jim," she asked in an awed voice, "that you will soon have to face papa?"

"No," replied Mr. Cutting blandly, "I do not forget that terrifying fact; I simply ignore it." He glanced slyly at his bride. "As a matter of fact, he will no doubt be filled with gratitude when he learns of how I sacrificed myself to save his only daughter from a felon's fate—"

"Jim—" said a reproachful voice which held the suggestion of tears. Mr. Cutting glanced over his shoulder, observed the utter absence of humankind—and the next moment the frolicsome car shied violently to the other side of the perfect road.

Good Touring Work

The Account of How A Little Curved Dash Runabout Proved Equal to Most Exacting Demands

By C. E. Bradley, of Bridgeport, Conn.

DON'T see haw you dare to make such long tours and go through such mountainous country with such a little machine," was the remark made by a friend of mine who owns a 24 H. P. W. Another friend, the owner of a C. 18 H. P. car, said: "Why, even my engine will pound, pound, pound on some of these country roads where the sod has been thrown up in the center, and *you* have only 7 H. P." Others say: "Don't take this or that road; it is too hilly." I said to my wife, "If this machine only had sails on the wheels I believe we could go straight up in the air and come down on the other side." So when I start out with my Model "B" 7 H. P. Olds runabout for anywhere, I get there.

On June 9th, at 1 P. M., Mrs. Bradley and I started for a tour of about 500 miles from Bridgeport, Conn., to New Haven, by shore road, 22 miles of very good roads, and then touring north through North Haven, Wallingford, Galesville, Berlin, New Britain, and west to Plainville, about 35 miles from New Haven, making 57 miles in 3 hours and 20 minutes of just nice, comfortable riding of about 15 miles per hour, although on some stretches of good road we ran at a 30-mile pace, but that is too fast to enjoy the scenery, and we were after real pleasure, and so only averaged about 15 miles per hour. Stopping at Plainville over Sunday, and giving our friends a spin around town, Monday at 8 A. M. we started for Hartford, 13 miles, and across the Connecticut river north to Springfield, Mass., about 30 miles, and then gridironing the city, up one street and down another, about 25 miles, through the streets of one of the prettiest cities in New England.

After putting a new spring in the low speed clutch, which had worn through from much use (about 700 miles), which took about 20 minutes to fix, we turned west toward Pittsfield, after being told we would have to get a horse to pull us up Jacob's Ladder, which is a 30 per cent grade clear to the top, up a hill about 4 miles west of Chester, Mass.

Everybody was much interested in us, and volunteered the information where we could hire a pair of horses to help us over the hill, and I was chuckling to myself all the time. However, we met one man with a big red touring car, who knew *something;* he said, "What's that machine you got—an Olds?" I said, "That's what it is!" He said, "They are great climbers, aren't they?" I said, "This machine never had a horse in front of it yet, and it's been over the top of the Catskill mountains, and I have put on the back seat and carried four people 52 miles on less than two gallons of 74-test gasoline, at 16c per gallon."

I then put in 3 gallons of 76 test gasoline, and we went on to tackle Jacob's

A PARTY OF OLDSMOBILE VACATIONISTS AT GATINEAU RIVER, ONTARIO.

Ladder. I did not know just where it was, and after going up some very steep hills, I concluded that we had climbed it, but after riding a few miles further we came to a crossroads with a guide board which read "Pittsfield 22½ miles, via Jacob's Ladder," then I looked up, and I must say I was a little shaky. I said to Mrs. Bradley, "You steer, and I will manage the power," and we started up, and we never stopped until we reached the top, and I wanted to pat the machine on the back, but said to Mrs. Bradley, "That machine is a hummer."

We spent some time here enjoying the view of the Berkshire Hills, which was magnificent. We then went on through Lee to Pittsfield, a very fine city. We rode about 15 miles through the principal streets and parks, and turned south through the Berkshire hills to Lenox and Stockbridge, and Great Barrington, and on to Lakeville, Conn., then to Millerton, N. Y. Here we had our first mishap; the front steering spring snapped in a rough hole in the road, and we were delayed two hours while a blacksmith put in a new leaf. We then went up the Harlem valley, about 25 miles, and turned west over the hills to Hudson, N. Y., then south to Tivoli, across on the ferry to the west bank of the Hudson, then south to Kingston.

Here I met a C. 18 H. P. touring car from Binghampton, N. Y., 142 miles away. The owner showed me his car, how nice the engine ran, and all the good points, and seemed very much pleased with it. Very little was said about my little Olds. We went on the ferry boat side by side. Mrs. Bradley said: "You will let them go ahead of us off the boat, won't you?" "Oh," I said, "I don't usually let folks get ahead of me." He had to get out and crank from the front, and I just cranked from the seat, and was off just a little ahead. We ran a few hundred yards to the hill, about a 20 per cent grade, and both went into the low gear, and the 7 H. P. Olds beat the 18 H. P. C. by getting to the top before they were half way up.

I then stopped to pump up my rear tires, and they passed on towards New York, and I did not expect to see them again, as they had about 15 minutes start of me, but after running about 10 miles we caught them and ran into Poughkeepsie, where we stopped for dinner, they passing us and going on to New York.

After spending an hour in Poughkeepsie, we went on south, and running about 15 miles we caught up with the C car again, just at the top of a hill with a good stretch of level road ahead. I sounded the horn to pass, but he would not let me by, but ran as fast as he could to beat me. I kept "toot, toot, toot," to go by. After

running about ¾ mile he gave me the road, and I left him clear out of sight at a 35 mile pace. Once more I chuckled, and patted the side of the curved dash. We then ran to Ossining, then east to Pleasantville on the Harlem R. R., then to White Plains, to Portchester, then east to Bridgeport, our home. With the many side trips and trips we gave our friends, our little Olds ran about 500 miles at an expense as follows:

Gasoline	$5.50
Oil	25
Spring	35
Spring	2.50
Plyers, lost	1.00
Screwdriver, lost	25
	$9.85

A Chauffeur Problem

From The Automobile.

Asa Goddard, secretary of the Cleveland Automobile Club, is offering strong opposition to a proposed measure in that city, prohibiting minors from driving automobiles. Speaking of the subject, he says: "My opinion is that an ordinance making restrictions as to the age of a chauffeur will not be effective. Some boys of sixteen—and girls, too, for that matter—are more apt at guiding a machine than men. There should be restrictions along other lines, but not as to age. Why not pass an ordinance prohibiting boys from driving horses? It is even more dangerous, in my opinion, to allow a boy to drive a horse than an automobile. Every day one sees grocery wagons driven recklessly through the streets by boys. The scheme of formal examinations now in force in a number of cities are the right idea. In Chicago the examining board consists of the city electrician, the commissioner of health and the city engineer. This is, in my opinion, an unwieldy method of handling the proposition, as one man could conduct the examination just as well. In Cleveland he would be kept busy about all the time. In Chicago boys under eighteen are not allowed to run automobiles, but in Massachusetts, where a state license is issued, there are no age restrictions. Rhode Island has no automobile speed law and there is less trouble than in most places. If a man is driving carelessly he should be arrested, not simply because he is going faster than a certain rate, but because he is endangering the lives of pedestrians. This is the way it is done in Rhode Island, and it works better than a speed law."

A glance at the accompanying illustration, which shows charming Miss Dorothy Goddard in the "Mary Ann," may explain why the secretary of the Cleveland Automobile Club is opposed to an age restriction. If Miss Goddard were enjoined from driving "Mary Ann," her "dad" would be forced to hire a chauffeur to drive him to and from his office. The little lady handles the machine with the skill of a veteran, and if all operators were as careful and as considerate of the feelings of pedestrians as Miss Goddard, there would be no occasion for the talk of an age limit.

MISS DORTHY GODDARD DRIVING "MARY ANN."

An Autumn Day in The Woods

By George S. Brown.

One of the most enjoyable outings that I have ever experienced occurred a short while ago. My business keeps me shut in from 6:30 in the morning till 6:30 at night, so when I managed to get a day off I was full of expectations as to what luck I would have. The chief hindrance to sportsmen is transportation, I have always found. You hire a horse, if you are not lucky enough to own one, and he has to be driven carefully, unhitched, sheltered, fed, etc. To me this has always been a nuisance, and I have solved the problem so far as I am concerned, by purchasing an Oldsmobile Standard Runabout. This little machine I keep in the barn which used to be occupied by the horse, and when not in use it costs me nothing. When I wish to take a run, all I have to do is to jump in and give the crank a whirl, and away I go. Automobiles are considered costly luxuries by many, but it is surprising, if you have

AN AUTUMN DAY IN THE WOODS—THE FIRST BIRD.

any mechanical genius and drive carefully, how reasonable one can be run.

Soon as the fall approached, I prepared the machine for the campaign. The rear deck I removed and made an extra one, on which I fastened a dress suit case by means of screws. In this I put my hunting togs, shells, etc. I carry my gun case just back of the cushion in the seat. I have a box on the right step, in which I carry tools, an extra inner tube and an extra gallon of gasoline, in case of breakdown or leakage. The machine will do an average of 14 miles an hour on the terribly hilly roads we have about here. On the level macadam roads, well—I will not commit myself, for the laws allows but 20 miles an hour.

The day before the hunt I received a call on the telephone something after this fashion:

"Hello! That you, George?'

"Yes."

"Do you want a companion on your trip tomorrow?

"Yes, if that is you, Jo."

It was my cousin, Joseph P————, of Laurel Hill, and I was pleased to have him for a companion on the hunt. Our destination was to be Preston City, to another cousin of mine.

The morning was clear, and making short work of breakfast, I looked the little runabout over, and finding everything O K, I packed up the things. My gun is an Ithaca hammerless, 12 gauge, 26-inch barrels, right cylinder and left full choke. After loading up, I started the motor and, backing into the road, threw in the high speed clutch and chugged off to Jo's.

He was ready, and taking his gun and shells, besides a full dress suit case, we were pretty well loaded for a 7 H. P. runabout. Getting under way, I opened the muffler cut-out and we chugged along right

AN AUTUMN DAY IN THE WOODS. THE DAY'S HAU

merrily. The way that little machine pushed its way through the sand at Brewster's Neck and climbed Spicer's hill, which was a terror, made me even more enthusiastic than I was and filled Jo with admiration. As we dashed along the narrow road, closed in on both sides with trees, we were surprised to see a partridge rise at the side of the road and fly along in front of us, then turn off into the brush. Immediately a second one flushed right next to the front wheel and sped away. But autos never shy. I opened the throttle a little wider and we covered the remaining miles in record time, whirling up to my cousin's door and giving the horn a toot that told of our arrival.

After a few minutes' conversation, we took our guns and went into the woods to try our luck. My cousin, John H———, was already in the field when we arrived, so Jo and I went together and entered the brush. We got separated after a short while, and up to 10:30 I got only one shot, and that one being a very difficult one, the bird naturally made good his escape.

At the house they said that dinner would be ready at 12 o'clock, so it looked as if I was going to be skunked for the morning. I decided to make another run through the woods before dinner, and had just entered them, when a gray squirrel dashed up a tree ahead of me. I went up to the foot of the tree and he started off through the top at full speed. A shot from the left barrel and I had him. Slipping him into my game pocket, I proceeded, and while crawling down a ledge, out dashed a partridge from the brush at the base. Then another and another, but not a one in sight. Just then one rose into plain view, and getting the little Ithaca in line, I pressed the forward trigger. A hard thump and a fluttering in the leaves left no doubt that the shot had been effective. I began to feel a little better in spirits by this time, and started after the others. One got up and away safely, offering no chance for a shot, but the next one turned a somersault as the right spoke, and to say that I was elated would be nothing but the mere truth.

It was 11:45 by this time, so I went for dinner. There I met my two cousins, and John had 5 grays, but Jo had had no luck at all. After dinner I got another gray, and Jo got 5, which completed our bag.

We had supper, and packing our goods, we took the road homeward, leaving a little smell of gasoline and a good deal of dust.

Representative Hill on Denaturized Alcohol

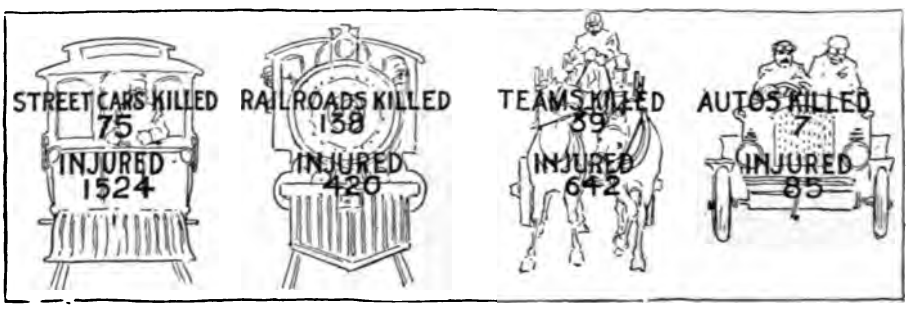
From Motor Age.

Washington, D. C., Sept. 15.—As reported some weeks ago in Motor Age, Commissioner of Internal Revenue Yerkes and Representative Hill went to Europe to make an examination of the working of regulations for free denatured alcohol in Great Britain, France and Germany. Commissioner Yerkes's views were given in a recent issue of Motor Age, and now Representative Hill has come forward with some additional information on the subject. He says that, spurred on by German competition, Great Britain has found it necessary to make much more liberal provision for the use of free alcohol than heretofore. Where a 10 per cent denaturant had been used formerly, only 5 per cent will hereafter be used, thus materially reducing the cost. Besides that, the cost of supervision, which has heretofore been thrown upon the consumer, will, under the terms of the bill, be hereafter paid wholly by the British government. The investigators also found that Australia had taken the matter up and that every probability exists for a law being passed similar to that adopted by the American congress at its last session. France is paying a bounty of 5 cents a gallon on all completely denatured spirit that is turned out in that country.

Representative Hill tells of visiting an extensive establishment near London for denaturing alcohol. On the ground floor were four large iron tanks holding about 2,500 gallons each. On the next floor were twenty-one casks of spirits which had been brought under seal from the bonded warehouse. On the third floor were the wood alcohol tanks, and on the fourth floor cans of methylated materials. On the fourth floor the covers to the wood alcohol tanks were removed—these tank covers were flush with that floor—and the contents gauged and tested. The quantity to be put into the tanks on the first floor was run off through pipes connecting with the first-floor tanks and the upper tanks relocked. Then, going to the second floor, each cask of the grain spirit was gauged and tested and the tank covers, which were flush with the floor, were removed and the casks of the grain spirit were run into the tanks below. The mixture was then stirred with long-handled wooden paddles and the tank covers replaced, and the material was ready for sale, free of tax. The mixture was 10 per cent wood alcohol and 90 per cent ethyl alcohol made from molasses, and was what is known as the ordinary methylated spirit used for manufacturing purposes only and used under bond. The completely denatured spirit is made by adding to the foregoing three-eighths of 1 per cent of benzine.

Mr. Hill said one of the professors at the institution in Germany, known as the In-

stitution of the Association of United Alcohol Manufacturers, which is operated and maintained for educational purposes at the expense of the trust, referring to the statement prevalent in America that the use of alcohol in the internal explosion engine resulted in the corrosion of the metal, remarked that that was nonsense, and immediately took Mr. Hill into a distillery where a large engine had been in continuous use with alcohol for the past six years. He admited, however, that they had not fully overcome the difficulties with regard to the use of alcohol in the high-speed automobile, but expressed entire confidence that it would only be a short time before that would be accomplished.



Automobiles Safest Carriers

A Comparative Record Made in Chicago

From Chicago Journal.

CASUALTIES in the battle between the 2,000,000 people of Chicago and the 32,000 street cars, trains, teams, automobiles, and other vehicles which pass through the streets, amounted in the first seven months of the year to: Killed, 259; injured, 2,671.

These are the figures of the official record as kept by the bureau of statistics of the police department in charge of Sergeant H. H. Elliott. Sergt. Elliott has just completed his statistics for seven months of 1906, and he is fearful that the record of last year is in danger of being wrecked.

The killed last year numbered 425; the injured, 4,535. When Coroner Hoffman made his report to the council recently, giving reasons why Chicago street cars mowed down 225 persons in 19 months, he wrote the beginning of a story which finds additional pages in the reports which are filed away by Sergt. Elliott each day. These reports bear, on the average, the names each day of one person killed and twelve injured in accidents of moving vehicles.

The automobile, much maligned as a death dealer, finds its wheels cleared of much blame by the figures in Sergt. Elliott's care. Of the 259 deaths in the city from vehicles up to August 1, only seven were the result of automobile accidents. Of the 2,671 persons injured, only 85 had complaint against the automobile. And of the seven deaths, automobiles were responsible in reality for only three. Four of the persons lost their lives in the river after an accident. They were passengers in a motor car, but it was not directly responsible for their death.

The surest death machine is the steam locomotive, according to the police department records. One hundred and thirty-eight persons have been killed by trains and locomotives since the 1st of January, and

in the same period 642 have been injured on railroads or as the result of railroad accidents.

Opposite the names of 85 of the persons killed by railroads are the words "Run over or struck by car," that being the description nearest fitting the accident. Eight of the deaths caused by railroads resulted when cars or locomotives struck wagons or street cars.

During July, 20 persons were killed and 65 others injured in railroad accidents inside the city limits. February and March each saw 27 deaths, with 51 and 54 injured persons, respectively. During January 23 persons were killed and 72 injured.

Next to the railroad train the street car is the greatest foe to life. During seven months 75 persons were killed and 1,524 others injured on the streets of the city by trolley and cable cars. Fifty of the deaths resulted in cases where persons were run over in accidents resembling automobile mishaps. Four of the deaths followed collisions between street cars and wagons.

"Teams, wagons, or other vehicles," caused the death of 39 persons and brought injuries to 642 others. Eighteen of the deaths resulted when teams ran down persons in the streets. During July alone there were 11 deaths and 124 injuries as the result of this kind of accident.

According to the official report, in July automobiles killed two and injured 17 persons. During the same month street cars killed 15 and injured 314. In June automobiles killed three and injured 22. The same month railroads killed 20 and injured 65, street cars killed 12 and injured 287, and teams killed 6 and injured 104. In March, when the second death of the year resulted from an automobile accident, railroads killed 27 and injured 54, while street cars killed 9 and injured 178, and teams killed 5 and injured 88. In February automobiles killed 1 and injured 8, against the 27 deaths and 51 injured from steam cars, the 8 deaths and 149 injured from street cars, and the 2 deaths and 52 injured by teams.

NEW GARAGE OF W. A. RYAN & CO., AUCKLAND, NEW ZEALAND.

MR. JAY RADEBAUGH READY FOR A TRIP.

Automobile Rural Delivery

Mr. Jay Radebaugh, of New Baltimore, O., Tells His Experience

From Motor Age.

The honor of having been the first rural mail carrier in Ohio to purchase and use an automobile in the rural mail delivery service is claimed by Jay Radebaugh; who has a long route over the level roads of northwestern Ohio, heading each morning from the little burg of North Baltimore.

"Yes, my name is Radebaugh and I reckon I am the man you're looking for because I think I am the only one using an automobile for this work in these parts," he said to Motor Age man. "A lot of the boys have become interested, but I have been using my machine almost every day for 10 months, so I think I am a pioneer in the game. So far as I know I was the first in Ohio to buy a machine, and possibly the first in the country. Rural Route Inspector Swayne made my route with me a short time ago and told me it was his first official trip in a machine. He was more than pleased with the time I made and in the success I was having. On the day he was here I made 30 miles with 147 stops in four hours, which would have taken a horse more than twice as long to cover, as the day was very hot.

"How did I come to try it? Well, I have always been interested in the automobile. I was not making a great deal out of my route, having to keep two or three horses, and after making a trial trip and watching the results of the machine in other road work I decided to take a chance, believing that if I took proper care of the car I could reduce expenses and save time in my work. The results have exceeded my expectations. I cover daily about 26 miles in about three hours. The condition of the roads are just fair. The country is rather level and 20 miles are over stone roads; about five miles of the stone roads have no top dressing and consist of very coarsely crushed stone, which makes it very rough. Then there are six miles which are about as bad roads as a person ever has to force a machine through—blacy muck and clay which sticks to the wheels and makes them

slide when wet, as it is much of the time during the spring.

'But with all the bad condition of road and weather I have run my machine practically all the time for 10 months and have used a horse only six times in that time, and I use my machine regardless of weather, summer and winter, and was out in it during the worst that we had last winter.

"Cost of operation? Yes I have a very fair idea as to what it costs to run the machine, and I know what it formerly cost me to operate with horses, and I can assure you in advance that I am greatly pleased with the results. In the 10 months I have used the car I have covered 7,500 to 8,000 miles and $12 will pay all repair bills. I am thoroughly acquainted with my engine and anything outside of actual breakage I take care of myself. I have on my route 100 stops and handle 7,000 to 10,000 pieces of mail per month, this being one of the largest routes in the country. I consider that with care an automobile will cost less than half as much to maintain as the necessary number of horses and it will do the work in about half the time, so you gain both ways. It takes about 20 cents per day to operate my Olds, the present price of gasoline here being 15 cents per gallon. When you consider that most rural routes take from two to three horses and extra buggies and harness you can see that the expense is no small item. The best you can board a horse for in this section at the present high price for hay and oats is about $12 per month, not including shoeing, repairs on wagons and harness and doctor's bills."

NO. I. THE PROGRESSIVE FARMER.

The readers of MOTOR TALK are indebted to Mr. J. J. Sprague, of Wellington, Kansas, for the two interesting photographs here reproduced and the following account of how the same came to be taken.

Dr. J. H. Stevens, of Wellington, invited Mr. Sprague to accompany him on a 35-mile trip southeast from that city. The first photograph pictures the stop made at the home of a progressive farmer, who helped to fill the water tank, was glad to receive the visitors and learn all he could about

NO. II. "ROBINSON CRUSOE."

automobiles, declaring that he was going to own one himself.

The farmer shown in the second photograph Mr. Sprague has named "Robinson Crusoe." This man ran the visitors off his place, "I don't want no devil waggin' on my place, scarin' my dogs and geese ter deth an' now you get," was his greeting. These two photographs illustrate the two extremes to be encountered by automobilists in the West.

A Kansas Joke

Here is a rather interesting paragraph from the Kansas automobile law: "Nothing in this section shall be construed as in any way preventing, obstructing, impeding, embarassing or in any manner or form infringing upon the prerogative of any political chauffeur to run an automobilious bandwagon at any rate he sees fit compatible with the safety of the occupants thereof, provided, however, that not less than ten nor more than twenty ropes be allowed at all times to trail behind this vehicle when in motion, in order to permit those who have been so fortunate as to escape with their political lives an opportunity to be dragged to death; and provided further, that whenever a mangled and bleeding corpse implores for mercy, the driver of the vehicle shall, in accordance with the provisions of this bill, throw out the life line."

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A New Charge Against The Automobile

A Milford (Del.) correspondent of a Wilmington paper reports that business men of Milford are becoming alarmed over the large number of automobiles in that town and declared that the cars hurt their business, in that they cause their farmer customers to drive to Frederica, a neighboring town, where the automobile has not yet made its appearance, and trade there. Horses in that section are still unaccustomed to the automobile, and in consequence of this the farmers' wives and daughters are afraid to drive into Milford, for fear they might meet an automobile on the road and have an accident.

We do not propose to show that this new charge brought against the automobile is not founded on facts, and that the Milford merchants are not actually losing some trade through the cars in their town; but the trouble will in any case be only of a temporary nature, for as the business of the Frederica merchants increases and they become prosperous, they, too, will purchase automobiles, and then the ordinary laws of competition will again prevail. So it will be seen that the farmers' horses must soon be trained to the automobile anyway, and the wise farmers will take advantage of the earliest opportunity to get their horses broken in to the automobile, so that thereafter they may not have to dread meeting a machine on the road and be free to do their trading wherever they please.—*Horseless Age.*

Are Selfish Motorists Diseased ?

That automobilists who disregard the rights of the public are suffering from abnormal auto-concentration (apparently the pun is an innocent one) is suggested by an editorial writer in *The Lancet* (London, September 8), who discusses "The Psychology of the Selfish Motorist." He notes in the first place that the advent of the motor-car has afforded an illustration of two human traits—the long-suffering of some non-motorists, and the blindness of some motorists to the claims of others to the use of the road. He goes on:

"This latter trait has developed to such a degree that the medical question may arise whether we may not have here some pathological phenomena associated with the possession of a motor-car; whether, in fact, the driving of such a vehicle may not lead occasionally to such a condition of auto-concentration as to leave the driver for the moment utterly unmindful of all other interests than his own. Be this as it may, this callousness to the rights of others only became apparent with the introduction of motor-cars, and the disease, if so it may be termed, has undergone a marked exacerbation during the recent spell of rainless weather. Behind many motor cars is a trail of blinding dust noticeable in some circumstances for fully half a mile, producing a temporary eye and throat soreness among those whom it envelopes and rendering the air for the time being quite irrespirable. Of all this too often the selfish motorist appears to be entirely unconscious; he passes on his way regardless of all the discomfort which he occasions, unmindful of what he leaves behind, and concentrated alone on what it to be seen ahead. Without the least compunction he rushes through the villages, raising excrement-bearing dust into the atmosphere, to be carried indiscriminately into the eyes and throats of the villagers and onto the meat, milk, and other articles exposed for sale as human food. Much of all this obvious injustice might be avoided were all motorists (as some are) possessed of elementary good taste or fellow feeling, and were ready to slacken speed in circumstances wherein the dust is raised is likely seriously to inconvenience other users of the public thoroughfares. The pathological side of the selfish motorist is still further accentuated by the fact that for the most part he is creating a nuisance for his own private purposes. There is no reason, other than self-indulgence, why the selfish motorist should pass from one place to another under conditions which materially detract from the comfort of other people, raising fecally-laden dust and increasing the chances of dust-borne infections or augumenting the cough of the unfortunate consumptive living by the wayside. It must be recognized that there are motorists who are mindful of the comfort and claims of those who use the highroads

for purposes other than those of pleasure, but their virtues are obscured by the failings of the unscrupulous scorcher, and they suffer with him in the general esteem."— *Literary Digest.*

Coming Events

Nov. 1-16—Berlin (Germany) Automobile Exhibition.

Nov. 12-17—1,000 Mile Reliability Tour. Australia.

Nov. 15-24—London, Olympia Motor Show, Agricultural Hall.

Nov. 24-Dec. 4—German Automobile Show, Berlin.

Dec. 7-23—Ninth Exposition de L'Automobile, Automobile Club of France.

Jan. 5-12—Automobile Show, Dublin, Ireland, Irish Automobile Club.

Jan. 12-19—Seventh Annual Automobile Show of the Association of Licensed Automobile Manufacturers, Madison Square Garden, New York City.

Jan. 22-26—Annual beach races on Ormond-Daytona Beach, Florida.

Feb. 2-9—Chicago Show, Coliseum and First Regiment Armory.

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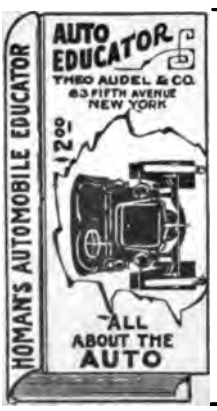

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ANNOUNCEMENT

The January issue of Motor Talk will mark the beginning of its third year of continuous publication. To celebrate this happy event in an appropriate manner the January issue will be an Anniversary Number, brimming from cover to cover with interesting illustrations and articles.

In this number Mr. Fay L. Faurote will resume the "How and Why of the Automobile" and discuss the transmission gear in his clear and instructive style.

In this number Mr. Lee Anderson, an automobile authority and well known as a writer for Collier's and other publications, has contributed an original automobile story, entitled, "An Automobile Revenge." This is one of the strongest short stories ever written with the automobile as a theme, around which an interesting love story is woven.

Besides these and numerous other good things there will be a story of the plant and product of the pioneer automobile manufacturer of the country.

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Hill climbing ability—again demonstrated by the [illegible] up the steep Twin Peaks, San Francisco. Here Model "A" [illegible] a new mark of 2 minutes 29 seconds, cutting [illegible] seconds off the record. It was the first and only [illegible] the hill.

Motor endurance—again demonstrated on November 20th, at Cleveland, when Model "A" completed a 100 hour non-stop run. A [illegible] statements proving details of this run will be sent to those interested on request.

Touring Quality—demonstrated on the 550 mile non-stop run made by Model "A" from Detroit, Mich., to Cincinnati, O., in 14 hours and 12 minutes actual running time. This run was made on the high gear. When Cincinnati was reached the car was driven to the top of View Street Hill, still on the high gear. The car which made this remarkable demonstration of touring and Hill Climbing ability was taken fresh from the factory and [illegible] the entire run of stock car.

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